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April 25, 2006

27-126467.002

BROWN AND CALDWELL

Mr. Don Webster
USEPA Region IV
Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, GA 30303-8960

RE: Construction Report for the Permeable Reactive Barrier
Grenada Stamping and Assembly
Grenada, Mississippi

Dear Mr. Webster:

Attached for your review is the Construction Report for the Permeable Reactive Barrier for the Grenada Stamping and Assembly Site.

Please let us know if you have any questions concerning the report.

Sincerely,

BROWN AND CALDWELL

Dale R. Showers, P.E.
Engineering Manager
Environmental Services

Michael J. Freehling, P.E.
Project Manager
Environmental Services

Enclosure

cc: John Bozick - ArvinMeritor
Linda S. Furlough, Esq. - ArvinMeritor
Don Williams – Grenada Stamping and Assembly
Toby Cook – Mississippi Department of Environmental Quality
Jeff Karp, Esq. – Swidler Berlin

P:\PROJ\26467 Grenada PRB CQA\Construction Report\L042406Webster.doc

CONSTRUCTION REPORT FOR THE PERMEABLE REACTIVE BARRIER GROUNDWATER INTERIM MEASURE GRENADA, MISSISSIPPI

prepared for

ArvinMeritor
Troy, Michigan

April 2006

126467.002

CONSTRUCTION REPORT FOR THE PERMEABLE REACTIVE BARRIER GROUNDWATER INTERIM MEASURE GRENADA, MISSISSIPPI

Prepared For:

ArvinMeritor Inc.
Troy, Michigan

Prepared By:

Brown and Caldwell
501 Great Circle Rd, Suite 150
Nashville, Tennessee 37228

April 2006

27-126467.002

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PROFESSIONAL ENGINEER'S CERTIFICATION

This is to certify that the materials for the portions of the interim measures designed and observed by Brown and Caldwell, including, but not limited to, trench excavation, zero valent iron and sand backfill, and outfall ditch modifications have been constructed in conformance with the Technical Specifications and Design Plans for the Permeable Reactive Barrier Groundwater Interim Measure in Grenada, Mississippi with the modifications and/or exceptions noted in this Construction Report.

Michael J. Freehling, P.E., P.G. — 4/25/06 — Date

Mississippi License No. 16101

1.0 INTRODUCTION

1.1 GENERAL

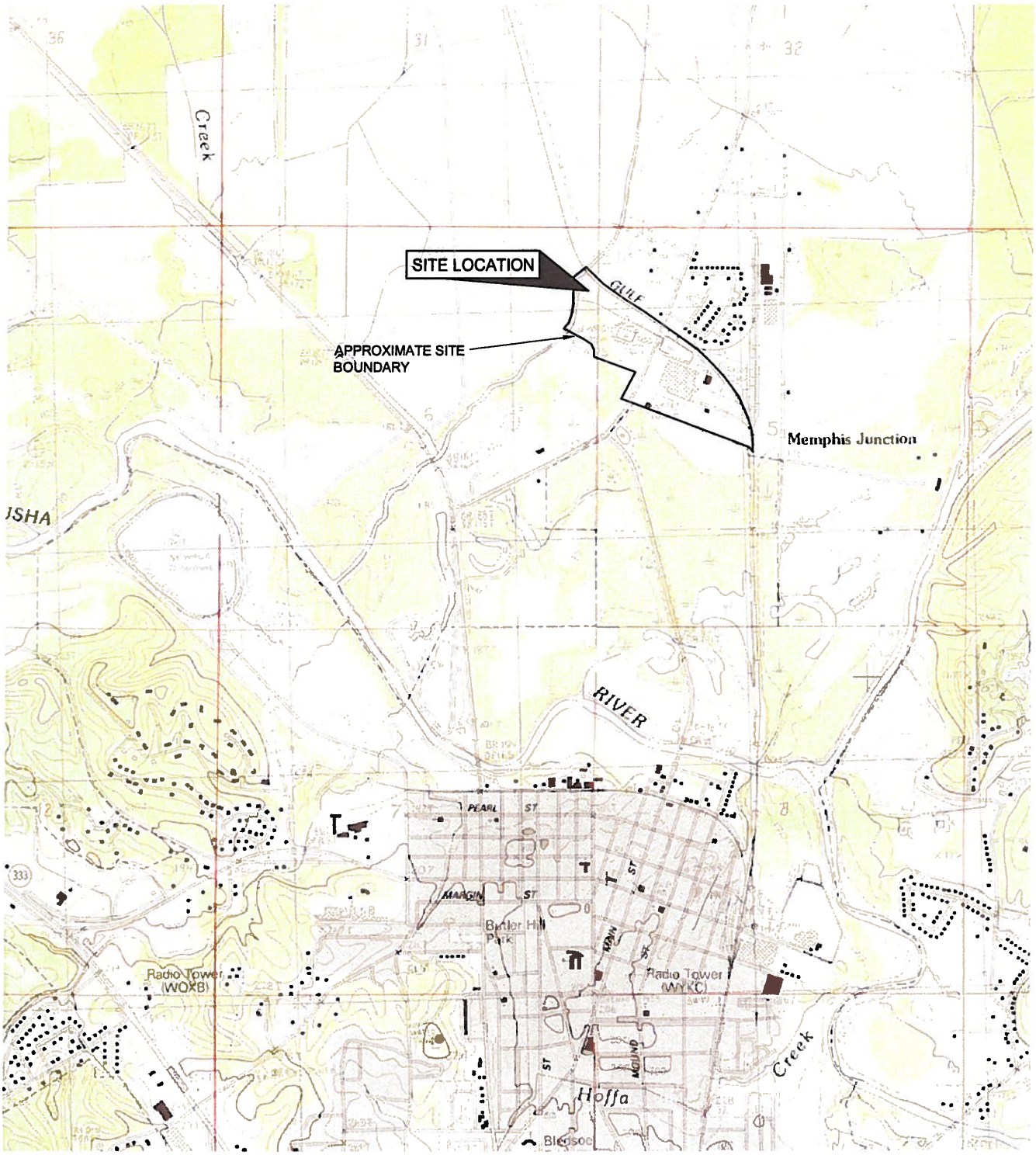
This Construction Report has been prepared to document remedial activities associated with the Permeable Reactive Barrier (PRB) Groundwater Interim Measure in Grenada, Mississippi. The construction site (Site) is located at 635 Highway 332, in Grenada, Mississippi (see Figure 1-1).

Construction activities started on August 31, 2004 and ended on March 29, 2005. Those activities included, but were not limited to, the trench excavation of a biopolymer wall, zero valent iron and sand backfill, and outfall ditch modifications. This Construction Report has been prepared in accordance with the requirements of the Design Basis Report (Brown and Caldwell, 2003), the Technical Specification and Design plans (Brown and Caldwell, 2004), the United States Army Corps of Engineers (USACE) Nationwide Permit #38, and the guidelines set in Envirocon, Inc. (Envirocon) work plan.

A summary of tasks completed during the remedial activities is provided below:

- Site preparation
- Work platform and spoils area construction
- Concrete end-stop construction
- Trench excavation and iron and sand backfill
- Outfall ditch modifications and riprap placement
- Culvert installation
- Site restoration

An assessment of each task and how it complies with the applicable performance criteria and/or technical specifications is discussed herein. Exceptions to, or deviations from, the applicable performance criteria and/or technical specifications are also discussed in this report, where appropriate.



Modified from U.S.G.S., Grenada, Mississippi Quadrangle, 1983

0 2000 4000

APPROXIMATE SCALE IN FEET

FIGURE 1

SITE LOCATION MAP
PERMEABLE REACTIVE BARRIER
GROUNDWATER INTERIM MEASURE

126467.002 GRENADA, MISSISSIPPI 06/05

BROWN AND CALDWELL Nashville, Tennessee

DRAWING NO.: 126467-06 DATE: 04/14/05 PLOT SCALE: 1=1

1.2 BACKGROUND

The Automotive Division of Rockwell International Corporation operated a wheel cover manufacturing facility in Grenada, Mississippi from 1966 to 1985 before selling the operations and property to Textron Automotive Company (Textron), formerly Randall Textron, who then sold the operations and property to Grenada Manufacturing, LLC (Grenada Mfg.) in 1999. Grenada Mfg. (Permittee), now Grenada Stamping and Assembly, continues to operate the plant. ArvinMeritor OE, LLC ("ArvinMeritor") is a successor to the Automotive Division of Rockwell International Corporation ("Rockwell"). ArvinMeritor succeeded to the rights and obligations of Rockwell as the result of a corporate restructuring in 1997 and a merger in 2000.

The remedial activities were based on the remedial alternatives recommended in the Revised Design Basis Report that was submitted to the United States Environmental Protection Agency (USEPA) Region 4 in April 2003. The Design Basis Report was prepared by ArvinMeritor, ArvinMeritor and Textron have conducted a number of environmental investigations at the referenced facility. The most extensive investigative work is reported in the 1994 Remedial Investigation (RI) Report conducted by ECKENFELDER INC., now Brown and Caldwell (BC). The work was performed in response to a Mississippi Department of Environmental Quality (MDEQ) Administrative Order on Consent designed to investigate the on-site landfill, and was subsequently expanded to include other areas of the Site. In addition to soil and groundwater impact, two areas containing free-phase organics, light non-aqueous phase liquid (LNAPL) and dense non-aqueous phase liquid (DNAPL), were identified. The RI identified the presence of trichloroethylene (TCE) and its degradation products, as well as toluene and chromium, in the soil and groundwater at the Site. A Baseline Risk Assessment was then performed for soil and groundwater as part of a Supplemental RI (Eckenfelder, March 1994). The primary concern with respect to impacted groundwater is the migration of chlorinated volatile organic compounds (VOCs) to Riverdale Creek on the west side of the Site. The baseline risk assessment identified eight VOCs (1,2-dichloroethane, 1,1-dichloroethene, 1,2-dichloroethene (total), tetrachloroethene, toluene, 1,1,2-trichloroethane, trichloroethylene, and vinyl chloride), one semi-volatile organic compound (bis 2-ethylhexyl phthalate), and two metals (chromium VI and arsenic) as constituents of concern.

Subsequent to the submittal of the RI Report, the facility became subject to regulation under Resource Conservation and Recovery Act (RCRA). A RCRA Facility Assessment (RFA) was performed by the USEPA and its contractor (A.T. Kearney, Inc.) as part of the Hazardous and Solid Waste Amendments (HSWA) permit process for the facility in 1996 and 1997. As a result of the Preliminary Review (PR) and Visual Site Inspection (VSI), 26 Solid Waste Management Units (SWMUs) and three Areas of Concern (AOCs) were identified.

An Interim Measures Work Plan was submitted in June 2000 and approved in July 2000 by the USEPA. The Interim Measures Work Plan addressed additional data collection and the evaluation of interim measures for both source control and site-wide groundwater.

Concurrent with the October 2000 groundwater sampling event, groundwater sampling at additional locations was conducted using direct-push technology. The objective of the direct-push groundwater sampling was to determine the lateral and vertical extent of the groundwater plume along Riverdale Creek and to determine the elevation of the top of the aquitard. In general, the new groundwater data suggested the need for additional groundwater interim measures at the Site.

1.3 INTERIM MEASURES EVALUATION

TCE and its degradation products currently impact a large portion of the Site groundwater. Impact to Riverdale Creek due to discharge of groundwater containing TCE and its degradation products have been identified as an environmental condition that could significantly benefit from implementation of interim measures.

A number of source control interim measures have been previously implemented at the Site. These measures include installation of a DNAPL recovery system for TCE and installation of an LNAPL recovery system for toluene at the source areas (starting in 1993) and ex-situ soil vapor extraction at the On-Site Landfill Area.

Thus, the focus of the identification and evaluation of interim measures has been on controlling the migration of groundwater impacted by TCE and its degradation products to Riverdale Creek (i.e., migration control).

Proven in-situ treatment technologies were evaluated, including:

- Permeable reactive barrier or PRB (i.e., zero valence iron)
- Air sparging curtain
- Enhanced bioremediation

These technologies have been evaluated for use at the Site both on an individual basis and in combination. Screening of applicable technologies was limited to known Site and waste characteristics and technology limitations. As documented for USEPA in a letter dated March 9, 2001, it was determined that a permeable reactive barrier was attractive for this Site due to its anticipated effectiveness and its low operation and maintenance (O&M) requirements. A PRB using zero valence iron filings was generally thought to be the most appropriate option for use at this Site.

The PRB wall location, length, and thickness were determined during the design phase and documented in the Design Basis Report submitted to USEPA on September 17, 2004. The PRB wall was installed as a trench to the top of the underlying aquitard and intercepts the entire cross-section of the groundwater plume depicted by the October 2000 sampling data.

1.4 REPORT ORGANIZATION

The following sections present a summary of the remedial activities performed as part of the interim measure construction, including a project description, construction documentation activities, and a summary of modifications, exceptions, and/or deviations from the Technical Specifications and Design Drawings issued for construction. In addition, supporting documentation provided herein includes items as follows:

Appendix A	Record Drawings
Appendix B	PRB Panel Summary
Appendix C	Daily Field Reports
Appendix D	Photographic Log
Appendix E	Log of Project Submittals

2.0 PROJECT DESCRIPTION

2.1 OVERVIEW

This section includes a description of the construction activities associated with the PRB Groundwater Interim Measure, the role of each party involved in the project, and the project schedule. The construction portion of the project primarily included the trench excavation of a biopolymer wall, iron-sand backfill, and the riprap placement in the outfall ditch. Construction areas with applicable, "as-built" modifications are shown on the Record Drawings included in Appendix A.

The project was generally constructed in accordance with the approved Design Basis Report, Technical Specifications and Design Plans, the USACE Nationwide Permit #38, and guidelines in Envirocon's work plan. Exceptions to, and/or deviations from, the Technical Specifications and Design Plans are documented herein.

2.2 PARTIES INVOLVED IN THE INTERIM MEASURES

ArvinMeritor, Inc. (ArvinMeritor), contracted with a prime contractor, Envirocon, to complete the construction activities and the implementation of the contract documents for the project. Brown and Caldwell (BC) was contracted by ArvinMeritor to serve as Engineer and to conduct the Construction Quality Assurance (CQA) activities for the project in accordance with the approved Technical Specifications and Design Plans. EnviroMetal Technologies Inc. (ETI) is the patent holder on the PRB wall technology, and was contracted by BC to assist with CQA for the PRB wall construction. ETI and ArvinMeritor also entered into a technology licensing agreement for the use of ETI's patented technology on this project. Grenada Mfg. provided feedback and assistance on Site access and usage, and access to iron storage areas inside its property.

Construction tasks completed and the associated parties were as follows:

- CQA — BC and ETI (BC's sub)
- Site Owner — Grenada Mfg.

• PRB wall and outfall ditch construction	Envirocon
• Surveying	Chad Woods and Associates (Envirocon's sub)
• Geotechnical laboratory	Midsouth Testing Laboratory (Envirocon's sub)
• Landscaper	Total Lawn Care of Pontotoc (Envirocon's sub)

Various vendors were used to supply heavy equipment and construction materials. The following is a limited list of vendors and the respective heavy equipment/materials supplied by each:

• Selected heavy equipment	Rental Service Corporation (RSC)
• Iron filings or zero-valent iron	Connelly-GPM Inc.
• Non-hazardous waste disposal	Waste Management
• Guar gum G150	Rantec Corp.
• Super Mud	Polymer Drilling Systems (PDSCo)
• Diesel and gasoline	Southland Oil Co.
• General fill and clay gravel	Townes Construction Co.
• Limestone products	Dunham Inc.
• PRB fill sand	Smith Brothers Sand and Gravel Co.
• PRB cap sand	MFS Stone & Gravel Fly Pit
• Concrete	MMC Materials and Inc., Townes Construction Co.

The CQA duties included primarily construction observation of the PRB and recordkeeping of the amount of iron and sand backfilled in the individual PRB wall panels, documenting interim measures construction in accordance with the approved Technical Specifications and Design Plans and any exceptions, approving changes and modifications to the Technical Specifications and Design Plans, and preparation of daily field reports documenting construction activities. The PRB wall panel summary and copies of the daily reports describing tasks observed by BC are included in Appendices B and C, respectively. The daily reports were supplemented with photographs taken by Envirocon and BC during the duration of the project, and photographs representative of the project are provided in Appendix D. BC also reviewed submittals from Envirocon and its subcontractors and/or vendors as part of the CQA, and a submittal review log is attached in Appendix E.

2.3 PROJECT COMPONENTS

As outlined in Section 1-1, the project components associated with the construction interim measures activities are as follows:

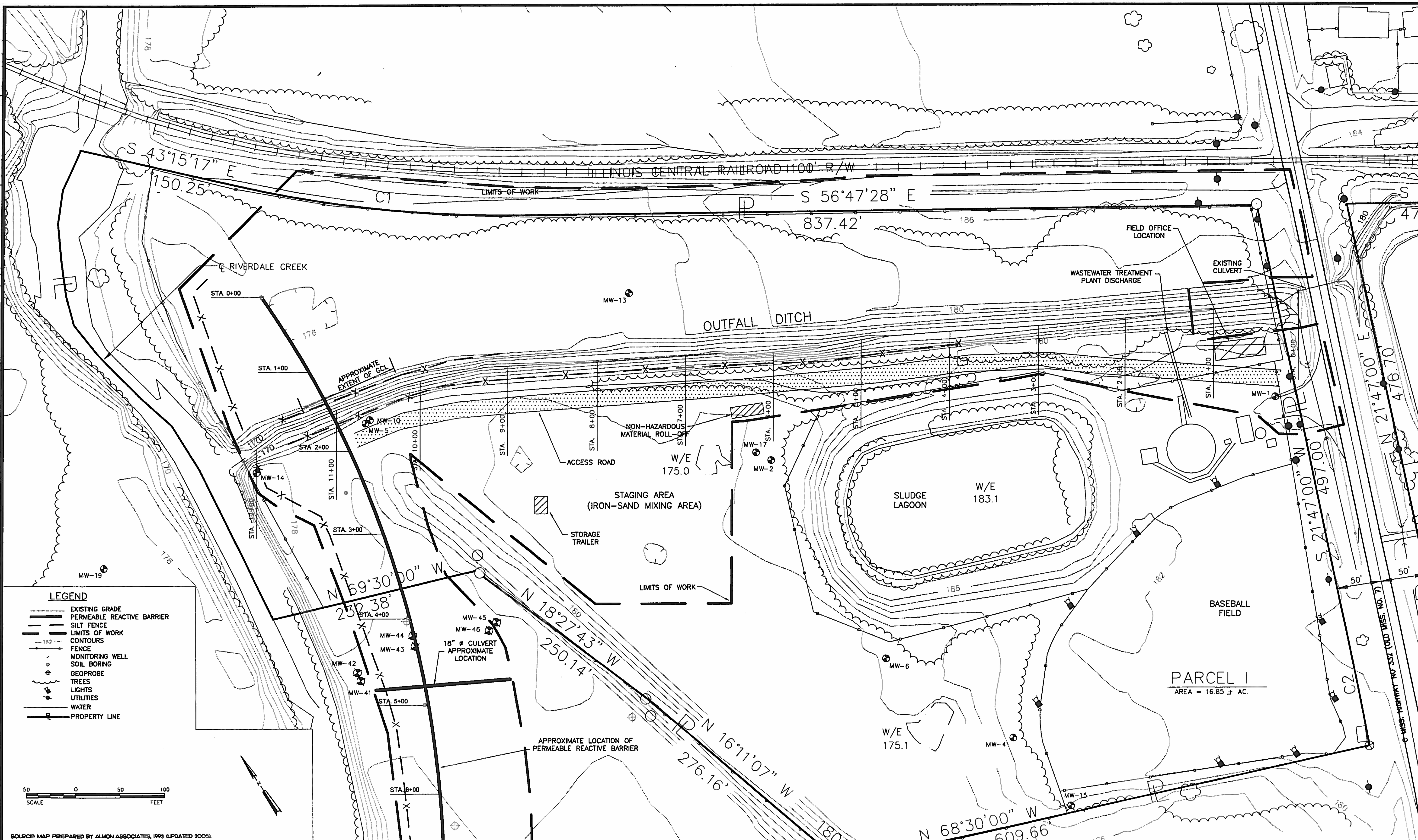
- Site preparation
- Work platform and spoils containment area construction
- Concrete end-stop construction
- Trench excavation and iron and sand backfill
- Outfall ditch modifications and riprap placement
- Culvert installation
- Site restoration

A description of the tasks involved with these is provided in the following sections.

2.3.1 Site Preparation

Site preparation activities started during the week of August 31, 2004, and included the following:

- Mobilization of temporary facilities and equipment - Two temporary field offices were stationed near the entrance gate facing Hwy 332 on the northeast end of the Site. The field offices contained, the design documents, Site Safety Plan and office support equipment (see Figure 2-1). One roll-off was placed at the staging area for non-hazardous waste disposal. Water was provided from a fire hydrant across Hwy 332. One 20-ft storage box was located on the southwest end of the Site (see Figure 2-2) and was used to store various tools and equipment such as pumps. A storage trailer was also located west of the staging area. It was used for storing light equipment but primarily as a place to conduct on-site magnetic separation testing of the various iron-sand mixtures for the PRB wall panels. Most heavy equipment (some of them were assembled on the Site) and the majority of key crew personnel were on the Site prior to the actual PRB wall construction at the beginning of October 2004. Heavy equipment included, but was not limited to, one long stick Komatsu PC-750 excavator, one long stick Komatsu PC-270 excavator, one Terex



ILLINOIS CENTRAL RAILROAD (100' R/W
LIMITS OF WORK
S 43°15'17" E
150.25'
C1
S 56°47'28" E
837.42'
S 5
477
RIVERDALE CREEK
STA. 0+00
STA. 1+00
STA. 2+00
STA. 3+00
STA. 4+00
STA. 5+00
STA. 6+00
STA. 7+00
STA. 8+00
STA. 9+00
STA. 10+00
STA. 11+00
STA. 12+00
MW-13
OUTFALL DITCH
APPROXIMATE EXTENT OF GCL
MW-10
MW-5
MW-14
MW-17
MW-2
NON-HAZARDOUS MATERIAL ROLL-OFF
ACCESS ROAD
W/E 175.0
STAGING AREA (IRON-SAND MIXING AREA)
STORAGE TRAILER
LIMITS OF WORK
SLUDGE LAGOON
W/E 183.1
FIELD OFFICE LOCATION
WASTEWATER TREATMENT PLANT DISCHARGE
EXISTING CULVERT
MW-1
S 21°47'00" W
497.00'
N 21°47'00" E
476.70'
N 69°30'00" W
232.38'
N 18°27'43" W
250.14'
N 16°11'07" W
276.16'
MW-45
MW-46
MW-44
MW-43
MW-42
MW-41
18" ø CULVERT APPROXIMATE LOCATION
APPROXIMATE LOCATION OF PERMEABLE REACTIVE BARRIER
MW-19
MW-6
W/E 175.1
MW-4
MW-15
BASEBALL FIELD
PARCEL I
AREA = 16.85 ± AC.
C2
50'
50'
℄ MISS. HIGHWAY NO 332 (OLD MISS. NO. 7)
N 68°30'00" W
609.66'
LEGEND
EXISTING GRADE
PERMEABLE REACTIVE BARRIER
SILT FENCE
LIMITS OF WORK
CONTOURS
FENCE
MONITORING WELL
SOIL BORING
GEOPROBE
TREES
LIGHTS
UTILITIES
WATER
PROPERTY LINE
50 0 50 100
SCALE FEET
SOURCE: MAP PREPARED BY ALMON ASSOCIATES, 1995 (UPDATED 2005).
WELL LOCATIONS SHOWN ARE APPROXIMATE.

126467-04 7/12/05 1=50

BROWN AND CALDWELL

SUBMITTED: ______ PROJECT MANAGER DATE: ______

APPROVED: ______ BROWN AND CALDWELL DATE: ______

APPROVED: ______ DATE: ______

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2"-SCALE ACCORDINGLY)

FILE 126467-04

DRAWN J. THOMAS

DESIGNED J. HOW

CHECKED M. FREEHLING

CHECKED W. RAINES

REVISIONS

ZONE	REV.	DESCRIPTION	BY	DATE	APP.

ARVIN MERITOR, INC.

PERMEABLE REACTIVE BARRIER GROUNDWATER INTERIM MEASURE

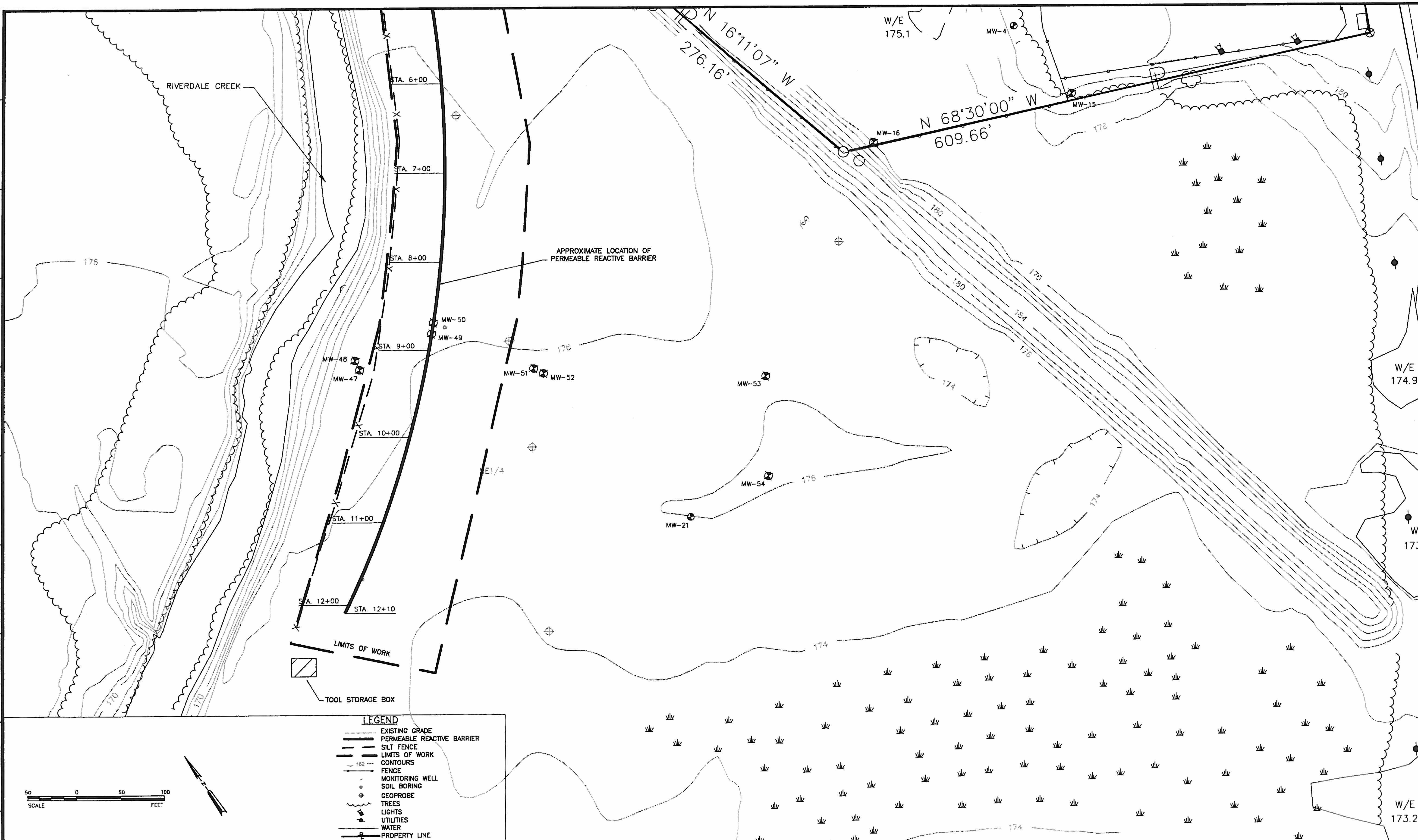
NORTHERN SITE MAP

(NOT A RECORD DRAWING, COPY OF DESIGN PLAN)

PROJECT NUMBER **126467.002**

DRAWING NUMBER **FIGURE 2-1**

SHEET NUMBER


RIVERDALE CREEK
STA. 6+00
STA. 7+00
STA. 8+00
STA. 9+00
STA. 10+00
STA. 11+00
STA. 12+00
STA. 12+10
APPROXIMATE LOCATION OF PERMEABLE REACTIVE BARRIER
MW-50
MW-49
MW-48
MW-47
MW-51
MW-52
MW-53
MW-54
MW-21
MW-16
MW-15
MW-4
N 16°11'07" W
276.16'
N 68°30'00" W
609.66'
W/E 175.1
W/E 174.9
W/E 173.9
W/E 173.2
176
174
178
180
184
170
NE1/4
MISS. HIGHWAY NO 332 (OLD MISS. NO. 7)
LIMITS OF WORK
TOOL STORAGE BOX
LEGEND
EXISTING GRADE
PERMEABLE REACTIVE BARRIER
SILT FENCE
LIMITS OF WORK
CONTOURS
FENCE
MONITORING WELL
SOIL BORING
GEOPROBE
TREES
LIGHTS
UTILITIES
WATER
PROPERTY LINE
MARSH
50 0 50 100
SCALE FEET
SOURCE: MAP PREPARED BY ALMON ASSOCIATES, 1993 (UPDATED 2005). WELL LOCATIONS SHOWN ARE APPROXIMATE.

126467-05 7/12/05 1-50

BROWN AND CALDWELL

SUBMITTED: ______ PROJECT MANAGER DATE: ______
APPROVED: ______ BROWN AND CALDWELL DATE: ______
APPROVED: ______ DATE: ______

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2"-SCALE ACCORDINGLY)

FILE 126467-05
DRAWN J. THOMAS
DESIGNED J. HOW
CHECKED M. FREEHLING
CHECKED W. RAINES

REVISIONS					
ZONE	REV.	DESCRIPTION	BY	DATE	APP.

ARVIN MERITOR, INC.

PERMEABLE REACTIVE BARRIER GROUNDWATER INTERIM MEASURE

SOUTHERN SITE MAP

(NOT A RECORD DRAWING, COPY OF DESIGN PLAN)

PROJECT NUMBER **126467.002**

DRAWING NUMBER **FIGURE 2-2**

SHEET NUMBER

American crane HC-80, one Tadano TR-600 XL crane, a conveyor belt, various loaders, forklifts, concrete trucks and dozers. The conveyor belt was located at the staging area next to the sand pile and iron bags for mixing purposes. A temporary concrete storage pad (or pig pen) was also built west of the staging area for storing iron-sand mixtures. It measured approximately 15 ft x 25 ft and was surrounded by temporary wooden mat walls stacked about 3 ft high.

- Clear and grub – Light clearing and grubbing consisted primarily of grass and brush cutting in areas such as the construction access road along the south end of the outfall ditch, the staging area, and around the PRB wall line. Heavy clearing and grubbing consisted of tree cutting on the banks of the outfall ditch and around the PRB wall line. Except along the PRB wall line, trees were cut as low as possible with stumps generally left in place in order to minimize erosion and traffic hazards. Tree cutting was also limited to a minimum in the limits of work east of the PRB wall line on the north side of the ditch since little traffic was anticipated in that area. Tree logs and debris were either hauled off the Site or burned on the Site in accordance with the City of Grenada Fire Department guidelines.

- Erosion and sediment control (E&SC) – E&SC features were installed and maintained throughout the duration of the project. E&SC measures consisted mainly of temporary silt fencing on the western end of the Site, and along the northern and southern edge of the outfall ditch. Silt fence maintenance included raking silt accumulated around the filter fabric, re-attaching the fabric to the posts, and/or replacing the fabric. A rock filter dam was also constructed at the mouth of the outfall ditch prior to its discharge to Riverdale Creek. Rock filter maintenance included raking accumulated debris and/or replacing stones when clogged.

- Construction access road – The construction access road consisted of laminated mats (16 ft x 8 ft) placed over woven geotextile fabric. The mat road began from the staging area and ended on the west side of the work platform at station 12+10. The construction access road varied from 16 ft to 24 ft wide.

- Surveying – The limits of work area was delineated prior and during clearing and grubbing. When most trees were cleared, the centerline of the PRB and the concrete end-stops were staked out by the surveyor.

- Water and slurry line – Several segments of 4-in. HDPE pipe were fused as needed on-site for the water and slurry line. A temporary water line was run from the fire hydrant across Hwy 332 to the Site via a storm water culvert under the highway. The water line was run next to the office trailers, the staging area and east of the PRB centerline. The slurry lines were mainly placed east of the PRB centerline in the spoils area and were piped to three frac tanks stationed on the work platform on the southern end of the Site. The frac tanks held approximately 20,000 gallons (each) and were used to hold biopolymer slurry (guar gum), soda ash, and Super Mud (a synthetic polymer).

- Outfall ditch preparation – Prior to the temporary 36-in. culvert installation, the invert of the ditch was partially excavated and aligned. The temporary culvert was then placed on the modified invert of the outfall ditch and approximately perpendicular to the PRB centerline from station 1+50 to 2+00. The purpose of the culvert was to prevent interruption of the Grenada Manufacturing wastewater discharge to Riverdale Creek while minimizing impact to the PRB construction between the banks of the outfall ditch. The 36-in. culvert was sized to accommodate the current NPDES discharge, and the storm water run-off from a 25-year and 30-minute storm event. The culvert spanned over 100 ft and was covered with general fill (consisting mainly of sandy clay material) compacted until flush with the existing ground elevation. This provided a temporary access bridge between both sides of the outfall ditch. Bentonite was also spread on the exterior surface of the casing to provide a better seal with the fill material.

2.3.2 Work Platform and Spoils Area Installation

The construction of the work platform started after most clearing and grubbing activities were completed. Most of the clearing and grubbing activities were completed by September 16, 2004. The spoils area installation commenced on September 30, 2004.

installed. Further discussion of the supplemental panels is presented in Section 2.3.4, Section 4.3, and Section 4.4.

2.3.4 Trench Excavation and Iron-Sand Backfill

Trench excavation and iron-sand backfill activities for the PRB construction started during the week of October 18, 2004. The objective of the PRB was to act as a passive barrier for the treatment of dissolved chlorinated compounds in groundwater before seepage into Riverdale Creek. The PRB was divided into 24 sections (each section measuring approximately 47.5 ft to 58.75 ft after concrete end-stop adjustment) and each section was divided into two panels (top and bottom). Therefore, a total of 48 panels made up the originally designed PRB wall. The required 100% iron width in each panel varied from 0.5 ft to 4.7 ft. The actual trench width varied from 2.5 ft to 5.75 ft based on the actual trenching equipment used and the percent of iron in the iron-sand mixture. The trench was modified accordingly during the project construction so that the minimum specified amount of iron (20 percent by volume) inside the panels could be placed. A typical PRB section construction included the following:

- Trench excavation using the PC-750 hydraulic excavator (bucket width was modified according to the iron requirements for each section),
- Addition of biopolymer guar slurry (preserved with Busan 1059 and soda ash) to shore the trench walls during excavation,
- Placement of excavated material in spoils area,
- Field verification of the top of the marl and a key –in depth of at least 1 ft in to the marl,
- Final clean-out with the hydraulic excavator to reduce fines accumulated at the bottom of the trench,

- Placement of development wells consisting of three 6-inch diameter PVC slotted risers placed approximately along the center line of the PRB section. One well was placed 12 feet from each end-stop, and one well was placed at the midpoint,

- Iron-sand mixing using the conveyor belt and concrete trucks with water amendment,

- Field testing of iron-sand mixture prior to placement using the magnetic separation technique,

- Iron-sand backfill via an 18-inch telescoping tremie pipe (The tremie bottom was reportedly kept approximately 1-2 ft above the backfill placement. Depth measurements were conducted at six locations and averaged when the panel was completed.),

- Removal of fines or suspended solids in the slurry during backfill, if necessary or practicable,

- Recycling of displaced slurry to the adjacent PRB section,

- For sections constructed after November 10, 2004, removal of settled backfill material, if necessary or practicable, that accumulated overnight on the bottom panel using the HC-80 crane equipped with the clam bucket,

- Backfill of iron-sand in the top panel (The top panel was usually backfilled at least 1 ft above the highest anticipated groundwater elevation, i.e., 168 ft. Depth measurements were conducted at six locations and averaged when each panel was completed.),

- Collection of iron-sand samples from the top and bottom panels using a 4-in steel probe for magnetic separation test (at least one sample was collected about mid-depth of each panel),

- Addition of an enzyme breaker (LEB-H) through the development wells to initiate degradation of the biopolymer slurry, thus increasing permeability of the PRB

(Approximately 5 gallons of LEB-H were usually added, and more than 3 pore volumes of trench fluid were reportedly re-circulated through the development wells to further accelerate the slurry degradation. A Marshall funnel viscosity (MFV) test of 27 seconds or less usually indicated that the slurry was completely degraded. The development wells are then cut below the top of the work platform elevation and capped.),

- Closure of the PRB section (A geotextile fabric was placed on top of the iron-sand mixture prior to backfill with fine sand to the original ground elevation. The sand layer varied in thickness and was then covered by clay gravel to restore the work platform.), and

- Collection and sampling of the spoils from the excavated material (representative samples of the spoils were analyzed and all showed TCE to be below the detection limit).

In the case of PRB sections or panels receiving 100% iron, the backfill process was similar, except, magnetic separation testing was not conducted prior to iron placement. The as-built PRB panels are illustrated in Drawing A-1 of Appendix A, and Appendix B shows the field design and actual amount of iron poured in each panel. In general, the minimum iron width was met or exceeded for all but twelve panels (1, 2, 4, 8, 33, 12, 36, 37, 41, 19, 20, and 45). The as-built configuration for the supplemental panels installed adjacent to these 12 panels are shown in Drawing A-2 of Appendix A. The supplemental panels are discussed in Section 4.4. Approximately 9,347 tons of iron were placed in the original 48 panels. An additional 719 tons of iron were placed in the supplemental panels.

2.3.5 Outfall Ditch Modifications and Riprap Placement

Outfall ditch modification activities started on December 14, 2004. The riprap placement spanned approximately from stations 1+55 to 12+25 along the outfall ditch. The main objectives of the outfall ditch modifications were:

- Raise and fill the invert to minimize groundwater migration to the surface water,
- Raise and fill the invert to minimize surface water infiltration to the PRB, and
- Install riprap over geotextile fabric over the invert and side slopes of the outfall ditch to minimize erosion during storm events.

Outfall ditch pre-modification activities included the following:

- Temporary soil dam installations,
- Wastewater diversion from upstream to outfall ditch effluent, and
- Removal of the soil bridge and 36-in. culvert across the PRB (at stations 1+50 to 2+00 along the PRB line).

Prior to installing the geotextile fabric and riprap, the design elevation of the subgrade was surveyed to verify the minimum slopes specified in the design drawings. The outfall ditch invert was then cleaned by removing sediment using a long stick bucket. The banks of the outfall ditch were cleared but most of the stumps were left in place to minimize erosion. Sediment and debris were either hauled to the spoils area or burn pile. General fill (i.e., sandy clay) and Portland cement (reportedly 2%) were mixed in a roll-off box. The subgrade mixture was then placed and graded using the long-stick bucket. Lime was sometimes added to enhance workability. The final lift was compacted with a roller and the compacted fill was usually allowed to set for a day before installing the geotextile fabric and riprap. The geotextile fabric was anchored on the ground and overlapped by at least 12 inches. The riprap placed was observed to be at least 1 ft thick. The height of the riprap line on the banks of the outfall ditch upstream and downstream of the PRB was approximately 5.5 ft and 4.5 ft, respectively, from top of the compacted fill. The completed ditch has a flat channel bottom, varying in width from approximately 3 feet to 6 feet, and maximum side slopes of 2 horizontal to 1 vertical (2H:1V).

Additional isolation of the PRB from the surface water was provided by installing a geocomposite clay liner (GCL) below the cover soil, riprap, and geotextile fabric across the PRB line. The GCL was installed from station 10+30 to 11+45 along the outfall ditch after the soil bridge and 36-inch culvert were removed. The invert was cleaned out before the subgrade was compacted in the ditch invert. Damp areas on the finished subgrade were then sprinkled with powdered bentonite. The GCL panels were then anchored on the finished subgrade as well as on the banks, and were overlapped by 6 inches. The GCL panels contained an embedded bentonite seam line approximately 4 inches from the edge of each roll and secondary seaming was not required. Once installed, the GCL was covered with a 6-inch drainage layer consisting of fine sand (or cover soil). The sand was

lightly compacted with the back of the long stick bucket. Geotextile fabric and riprap were then placed over the cover soil.

2.3.6 Culvert Installation

An 18-in. corrugated metal culvert that extends through the width of the work platform and spoils pile from east to west was installed on March, 9, 2005, near station 4+75, after all trenches were closed and the spoils area was graded. The objective of the culvert is to improve drainage around monitoring wells MW-45 and MW-46 by preventing surface water from accumulating on the east side of the spoils pile. The culvert was placed at the existing ground surface and trenched through the work platform and spoils pile and stretches from the eastern toe of the spoils berm (upstream) to the western toe of the work platform (downstream). It was indicated that there was approximately 10 inches drop in elevation. The culvert spanned 120 ft and is comprised of three 40-ft sections. The soil from the spoils area and the work platform was removed by a long-stick trackhoe fitted with a 2-ft wide bucket. Modified bedding material consisting of clay gravel was mixed with approximately 2 percent Portland cement, as indicated. Approximately six inches of the modified bedding material was lightly compacted with the back of the bucket on the existing ground elevation before the culvert was installed. The O-rings were placed on the joints to provide a watertight seal and the culvert sections were tied with a coupling band. The culvert was covered with the lightly compacted modified bedding material with thickness ranging 1.0 to 1.5 ft. Excavated material from the culvert installation was graded back into the spoils area.

2.3.7 Site Restoration

Site restoration, in general, included the access road construction and grading the spoils area, removal of mats in the construction access road, grading of the disturbed areas, silt fence maintenance and removal where appropriate, equipment decontamination and disposal of non-hazardous debris, and seeding.

- Access road construction – Once the trenches were closed and the culvert was installed, the work platform consisting of clay gravel was regraded to construct the access road which ran approximately on the centerline of the PRB. The last lift of the access road was

mixed with Portland cement (reportedly approximately 2 percent) to improve workability and further stabilize the surface. The access road on the work platform is approximately 20 ft wide and sloped to the west. Mats and geotextile fabric on the access road from the entrance gate to the work platform along the outfall ditch (except from station 8+00 to 10+00) were salvaged or disposed of before a 6-in. cover of 610s limestone was placed.

- Spoils area – The spoils area was graded after placement of the excavated material from the trenches and disturbed locations such as the staging area. The graded spoils were then covered with approximately 6 inches of imported general fill (sandy clay).

- Construction access road restoration – Mats on the construction access road adjacent to the west side of the work platform that could be salvaged were taken to the staging area for decontamination. Damaged mats were hauled to the burn pile located at station 2+50 in the spoils area. The geotextile fabric beneath the mats was removed and disposed off-site. The existing ground surface below the mats was then graded in preparation for seeding. The surface was also dressed so that water would generally flow to the western edge of the Site.

- Restoration of other areas – Other disturbed areas such as the staging area were also graded in preparation for seeding. Prior to grading, the surficial layer, containing mostly spilled iron and sand, was scraped and hauled to the spoils area. Mats around the iron-sand staging pad were either salvaged or hauled to the burn pile. The concrete pad inside the staging area was left in place. Most of the concrete around the staging pad was demolished and hauled either off-site for disposal or buried in the spoils area.

- Silt fence – Most of the silt fence on the western limits of work was removed except around the drainage swales. The silt fence along the southern edge of the outfall ditch was maintained and kept in place. The silt fence will be removed after sufficient vegetation has been restored to the disturbed areas.

- Decontamination and disposal of equipment and tools (pressure washing and steam cleaning) occurred around the staging area. Once cleaned, the equipment and tools were

returned to the vendors or shipped off-site. Debris and refuse were collected and disposed in roll-offs. Wood debris that included palettes, stumps, and damaged mats were hauled to the burn pile.

- Seeding – Disturbed areas were hydro-seeded after regrading. Seed mixture consisted of brown tip millet and fescue (each 100 lb/acre), covered by mulch and fertilizers. Areas that were not accessible for hydro-seeding were seeded manually.

2.4 CONSTRUCTION SCHEDULE

Mobilization to the Site occurred on August 31, 2004. Kick-off for the construction activities occurred on September 1, 2004. Construction activities began on September 3, 2004. The submittal review process for these activities began the week of September 6, 2004 in preparation of mobilization to the site by Envirocon. Submittals were prepared and reviewed as the construction progressed. A summary of the submittals provided by Envirocon, and submittal review by BC is included in Appendix E. The project was interrupted from November 25 to 28, and December 23 to 26 due to holidays. The majority of the work was completed by March 23, 2004. A Final Construction inspection was conducted by ArvinMeritor, BC, Grenada Mfg., and Envirocon on March 29, 2005.

3.0 CONSTRUCTION DOCUMENTATION ACTIVITIES

This section includes a description of the construction observation activities, construction documentation, and construction quality assurance (CQA) roles and personnel involved in the site interim measures construction.

3.1 PROJECT DOCUMENTATION

The following documents were used and created during the project construction in conformance with the Construction Quality Assurance Plan dated April 2003:

- Envirocon's Work Plan
- Envirocon's Health and Safety Plan
- Record Drawings
- PRB Panel Summary
- Construction Daily Reports and Photographs

3.2 CONSTRUCTION MEETINGS

Construction related meetings were held at critical times during the project. Two meetings were held prior to mobilization; one prior to the award of the contract (i.e. Pre-Award Meeting) and one just prior to construction (i.e., Pre-Construction Meeting). The Pre-Award Meeting was held on May 18, 2004 and was attended by Arvin Meritor, BC, ETI, and Envirocon. The Pre-Construction Meeting was held on September 1, 2004 and was attended by ArvinMeritor, BC, ETI, Grenada Mfg., and Envirocon. Three on-site construction progress meetings were held (i.e., October 6, 2004, November 16, 2004, and December 9, 2004) and attended by BC and Envirocon. ArvinMeritor, ETI, Grenada Mfg., and two representatives from the USEPA were also present during the November 16, 2004, meeting. Several conference calls were also held during the duration of the project. Two pre-final construction inspection meetings between BC and Envirocon were held on February 18, 2005, and March 23, 2005, to discuss punch-list items. The pre-final construction meetings were attended by BC and Envirocon. The Final Construction Inspection meeting was held on March 29, 2005, and was attended by ArvinMeritor, BC, Grenada Mfg., and Envirocon.

3.3 CONSTRUCTION OBSERVATION DUTIES

As discussed in Section 2.2, construction observation and CQA during implementation of the interim measures consisted of full-time on-site observation by BC personnel. In addition to attending the progress meeting on November 16, 2004, ArvinMeritor and ETI were also on-site periodically to monitor the construction activities.

Details of the daily construction activities were documented on field observation logs. BC's construction observation logs are detailed in the Daily Field Reports and by selected photographs which are included as Appendices C and D, respectively.

3.4 PRB GROUNDWATER INTERIM MEASURES DOCUMENTATION

Implementation and construction of the PRB Groundwater Interim Measure project were completed in accordance with the "Technical Specifications and Design Plans", February 2004, as approved by the USEPA. Modifications and/or deviations from the approved design are discussed in Section 4.0 of this Construction Report. As part of the implementation, records were compiled throughout the course of the project. The following documentation has been included in the appendices to this report:

- Record Drawings
- PRB Panel Summary
- Daily Field Reports
- Photographic Log
- Log of Project Submittals

4.0 MODIFICATIONS AND EXCEPTIONS TO THE DESIGN

Modifications and exceptions to the approved Technical Specifications and Design Plans were made during the construction phase of the PRB. This section describes these modifications and/or exceptions and, as appropriate, justification for the modifications and/or exceptions. In some cases, modifications and/or exceptions were, in part, based upon actual field conditions encountered at the time of construction. None of these modifications and/or exceptions adversely impact the performance of the PRB. In some cases, the revisions were made to enhance their performance.

4.1 SITE PREPARATION

- Clear and grub - The area of the proposed construction access road linking the south end of the work platform to Highway 332 was not cleared, thus preserving a significant portion of the wetlands. The construction access road on the north side of the Site at the main gate was deemed sufficient to handle all Site vehicular traffic.

- Erosion and sediment control (E&SC) – Portions of the silt fence line on the northwestern end of the Site were shifted closer to the limits of work to provide additional room for traffic and mat placement. Moreover, the specified silt fence consisted of woven wire fence backing filter fabric attached to 3 in. x 3 in. x 4 ft wooden posts spaced at a maximum of 4 ft. Instead, standard silt fence consisting of filter fabric tied to 1.5 in. x 1.5 in. x 4 ft wooden stakes spaced at 10 ft was proposed and used during the duration of the project. The standard silt fence provided adequate erosion and sediment protective measures; however, it required more maintenance. The woven wire fence backing filter fabric was reportedly unavailable at the beginning of the project.

- Erosion and sediment control (E&SC) - The specified rock filter dam at the mouth of the outfall ditch consisted of AASHTO No. 67 stone and R-4 riprap upstream and downstream, respectively. However, due to their reported unavailability from the local vendor Dunham, Inc., the stones were substituted by AASHTO No. 57 stone and

3-inch bedding stone, respectively. Then, it was observed that the rock filter would clog frequently with large debris which would raise the surface water level in the outfall ditch. Therefore, the 3-in. bedding stone and the AASHTO No. 57 stone were replaced by the larger 4-8 in. gabion stone and 3-in. bedding stone, respectively.

- Erosion and sediment control (E&SC) - Four swales were constructed on the west end of the Site within the limits of work to improve drainage and access during and/or after rainfall. They were typically 3-4 ft wide and 2-3 ft deep. Three of those swales were approximately located at station 4+50, 10+50 and 13+00 west of the PRB line and discharged into Riverdale creek. A rock filter (3" bedding stone) and a silt fence were placed at the downstream and upstream end, respectively, of the swale. The fourth swale was located at station 2+00 west of the PRB line but discharged into the outfall ditch approximately 10 ft east of monitoring well MW-14. At the end of the project the swale at station 13+00 was backfilled to the existing ground surface elevation; while the silt fence at the remaining three drainage swales was removed and the rock filters were replaced with clean stone (3" bedding stone).

4.2 WORK PLATFORM AND SPOILS AREA INSTALLATION

- Work platform – The original platform design specified an approximate width of 60 ft. The constructed platform was reduced to about 36 ft and was supplemented by a mat road adjacent to west which varied from 16 ft to 24 ft in width. Furthermore, the work platform was less than 3 ft high as it tapered from station 4+00 to the construction access road along the outfall ditch at 2+25 to improve traffic conditions. Limestone gravel (610s) was substituted for clay gravel as the last lift on the work platform to improve conditions for equipment traffic. The modified proctor test (minimum of 92% dry density) was still performed on the 610s; however, the moisture content test was waived for the 610s since the material tends to dry fairly quickly. For this reason, due to unfavorable weather towards the end of the work platform construction phase, clay gravel was substituted by 610s in the last four lifts from station 0+00 to 2+00.
- Spoils Area Installation - The spoils berm material consisted generally of imported general fill (i.e., sandy clay) except on the northern side of the outfall ditch where the

material was taken from the existing railroad berm or dummy line. The spoils berm perpendicular to the PRB line at station 12+10 consisted mainly of existing grubbed topsoil from the south end of the Site. The spoils area was also expanded about 30 ft to the east from approximately station 5+00 to 8+50 to accommodate the extra excavated material from the supplemental PRB panels. The USACE was notified of the spoils area expansion based on a telephone conversation in January 2005, and verbal approval was given by Mr. Lobred of USACE. The configuration of the spoils area expansion was included with the certification of compliance that was submitted to the USACE on May 10, 2005. To improve drainage in the spoils area during storm events, the spoils berm was cut at four locations and these cuts were filled with 3" stone. The stone filters were approximately 3-4 ft wide. The four swales were constructed only after samples of the excavated material had tested below detection limits for TCE.

4.3 CONCRETE END-STOP CONSTRUCTION

- Concrete end-stop – During excavation of the first end-stop at station 11+50 on October 1, 2004, an apparent cave in was observed. The platform at that location was raised by approximately 4 ft and the slurry was modified with the addition of Super Mud preserved guar slurry. The mixture was observed to enhance trench stability. Subsequent end-stops construction after October 5, 2004, reportedly used a similar slurry mixture (i.e., Super Mud and preserved guar) without platform elevation adjustment.

- Concrete end-stop supplemental panel – An additional end stop was installed at station 6+00 adjacent to the east of the original end-stop before the supplemental panel installation started at Panel 12/36 (from station 5+50 to 6+00) and 37 (bottom panel from station 6+00 to 6+50). The end-stop provided additional trench stability between the two adjacent bottom supplemental panels (i.e., 36 and 37) during iron-sand backfill.

- Concrete end-stop demolition – The end-stop at station 1+50 was partially demolished once the soil and the temporary 36" culvert were removed from the outfall ditch in preparation for the GCL installation. The end-stop was chipped till flushed with the

finish subgrade of the outfall ditch bank. The chipped concrete was placed in the spoils area and covered with excavated material.

4.4 TRENCH EXCAVATION AND IRON-SAND BACKFILL

- PRB Panels – Twelve panels, i.e., 1, 2, 4, 8, 33, 12, 36, 37, 41, 19, 20, and 45 (7 top panels and 5 bottom panels), did not meet the minimum specified iron width during backfill. It was due to several possible causes such as suspended fines in the recycled slurry and the trench displacing volume intended for iron and sand. To rectify the iron deficit in the 12 panels, adjacent trenches were dug parallel upstream within 10 ft of the original PRB. The iron width ranged from 0.4 ft to 0.8 ft and the trench width varied from 2 ft to 2.5 ft. The method for PRB supplemental panels construction was the same as the process outlined in Section 2.3.4. Sand was backfilled on top of the bottom supplemental panels if no iron was required in the upper panel.

- Iron Grain Size Analysis Results – Thirty-two (32) discrete grab samples were collected from the granular iron purchased for the project to confirm that the iron met the grain size specification supplied by the manufacturer. These discrete grab samples were collected from the top of the bags of iron. Of the 32 samples that were tested, 19 met the specification and 13 were slightly outside the specification. Of these 13 samples, seven samples were found to be slightly finer and six samples were found to be slightly more coarse than the specified grain size ranges. Since the slight deviation from the specified grain size ranges were nearly evenly split between more coarse and more fine and typically hundreds of bags of iron were used in each panel, the grain size deviations are not considered significant.

4.5 OUTFALL DITCH MODIFICATIONS AND RIPRAP PLACEMENT

- General fill and Portland cement fill – Due to unfavorable weather conditions, Portland cement was added to the general fill to improve workability of the compacted fill in the bottom of the ditch. The specified modified Proctor and the sand cone tests specified for the compacted fill in the invert were substituted with visual observation and pocket

penetrometer testing at every 100 ft along the bottom of the ditch. A penetrometer reading of at least 1.0 ton/sq-ft 24 hours after placement was considered acceptable.

- Riprap extension – The riprap placement was extended upstream from station 4+60 to 1+55 at the wastewater discharge along the outfall ditch. It was determined that the riprap extension would further reduce the potential for erosion along this reach of the outfall ditch.

- Riprap material – The specified R-3 riprap was substituted with 4 to 8 in. gabion stones. The R-3 riprap was reportedly not available from the vendor at the time of the outfall ditch modifications. The 4 to 8 in. gabion stone gradation was submitted and was deemed a satisfactory substitute for the R-3 riprap.

- Existing bank slopes – Some spots along the banks slightly exceeded the specified 2:1 slope. The subgrade on the steeper banks was mainly left undisturbed due to the presence of stumps. Removal of the stumps might have caused additional erosion problems.

- GCL testing – Material conformance sampling and testing of the GCL was not performed. It was determined that the tests were not necessary due to the relatively small amount of material used.

4.6 CULVERT INSTALLATION

- Bedding material – Due to unfavorable weather conditions, the bedding material was mixed with cement to improve workability of the compacted fill. Therefore, the specified density testing was not performed. The bedding material was instead visually inspected.

4.7 SITE RESTORATION

- Access road on and to the work platform – The access road on the work platform was not crowned but was sloped to the west to reduce the potential for ponding in the spoils area. Furthermore, the modified proctor density tests were not conducted on the final access road lifts since heavy equipment traffic is not anticipated in the future. Instead, cement was added to the soil and the compacted lifts were visually inspected. Mats beneath the access road leading to the work platform from approximately station 7+00 to station 11+00 along the south side of the outfall ditch were left in place. It was determined that they would improve drainage around that area by raising the existing ground elevation and also providing a stronger base for the access road.

5.0 POST-REMEDIATION CARE REQUIREMENTS

Activities included as part of the post-remediation care for the site include:

- Inspection and maintenance of the silt fence on the south end of the outfall ditch and along the top of the east bank of Riverdale Creek.

- Establishment of acceptable healthy vegetative cover on the staging area, spoils area, and disturbed areas such as areas above the riprap line on the outfall ditch banks.

- Removal and proper disposal of the silt fence after acceptable healthy vegetative cover has been restored to the areas mentioned above.

6.0 SUMMARY AND CONCLUSIONS

Based on the foregoing data and discussion, the interim measures described in this report for the PRB Groundwater Interim Measure in Grenada, Mississippi were generally completed in conformance with the approved Technical Specifications and Design Plans and Envirocon's approved work plan with the modifications and/or exceptions noted in Section 4.0.

With the exceptions noted in Section 4.0, the construction tasks performed for the interim measures were consistent with the requirements as follows:

- Site preparation – Clearing and grubbing occurred within the limits of work and was kept to a minimum as necessary to reduce impact to the protected wetlands area. Stumps on the outfall ditch banks were kept in place to further reduce erosion to Riverdale Creek. Erosion and sediment controls were implemented and maintained before and throughout the PRB construction to control sediment migration to Riverdale Creek during storm events.

- Work platform and spoils area installation – The work platform and the spoils area were installed in substantial conformance with the technical specifications and design plans with the minor modifications and/or exceptions noted in Section 4.0. The work platform was constructed along the PRB centerline to provide additional hydraulic head to the biopolymer slurry. A berm was installed to the east of the PRB line to contain the spoils from the excavation. The existing ground surface in the spoils area was covered with woven geotextile fabric before excavated material placement.

- Concrete end-stop construction – The concrete end-stops were installed approximately every 50 ft on the PRB centerline except at station 0+00 and station 12+10. The end-stop construction was in substantial conformance with Envirocon's work plan with the minor modifications and/or exceptions noted in Section 4.0. In general, the trenches were keyed approximately 2-3 ft in the marl prior to pouring concrete. Excavated material was placed in the spoils area. Representative samples

of the spoils were collected and analyzed for TCE. Results showed TCE to be below the detection limit in all the samples. The end-stops were allowed to cure at least 24 hours prior to PRB trench excavation. No significant damage of the concrete end-stops was observed or reported.

- Trench excavation and iron-sand backfill – The iron-sand backfill was performed in general conformance with the technical specifications and design plans with the minor modifications and/or exceptions noted in Section 4.0. In general, the trenches were excavated in 47.5 ft sections using the biopolymer slurry method. Each section was divided into two panels (upper and lower), and each panel was backfilled with the specified iron-sand mix. Samples before and after pour were collected and analyzed using the magnetic separation method. Excavated material was placed in the spoils area. Representative samples from the spoils were collected and analyzed for TCE. Results showed TCE to be below the detection limit in all the samples. Once iron placement was completed, the slurry was broken down with an enzyme breaker to increase the PRB permeability. After the slurry had degraded, the trench was capped with geotextile, sand, and clay gravel. Trench excavation modifications and supplemental panels were performed accordingly to meet the minimum specified iron width. Supplemental panels consisted of trench excavation parallel to the original PRB using the biopolymer slurry method within 10 ft upstream of the original PRB line. With the installation of the primary and supplemental panels, the design iron thickness requirements were met.

- Outfall ditch modifications and riprap placement – The outfall ditch modifications and riprap placement were constructed in substantial conformance with the technical specifications and design plans with the minor modifications and/or exceptions noted in Section 4.0. The invert of the ditch was raised above the highest anticipated groundwater level to reduce seepage. In general, geotextile fabric and riprap were then placed over the raised invert of the ditch from the wastewater discharge structure to the intersection of the outfall ditch and Riverdale Creek. A geocomposite clay liner was also placed in the outfall ditch across its intersection with the PRB to further reduce surface water infiltration into the PRB wall.

- Culvert installation – The culvert was installed at approximately station 4+75 across the PRB to improve drainage and reduce water ponding around the monitoring wells east of the spoils area.

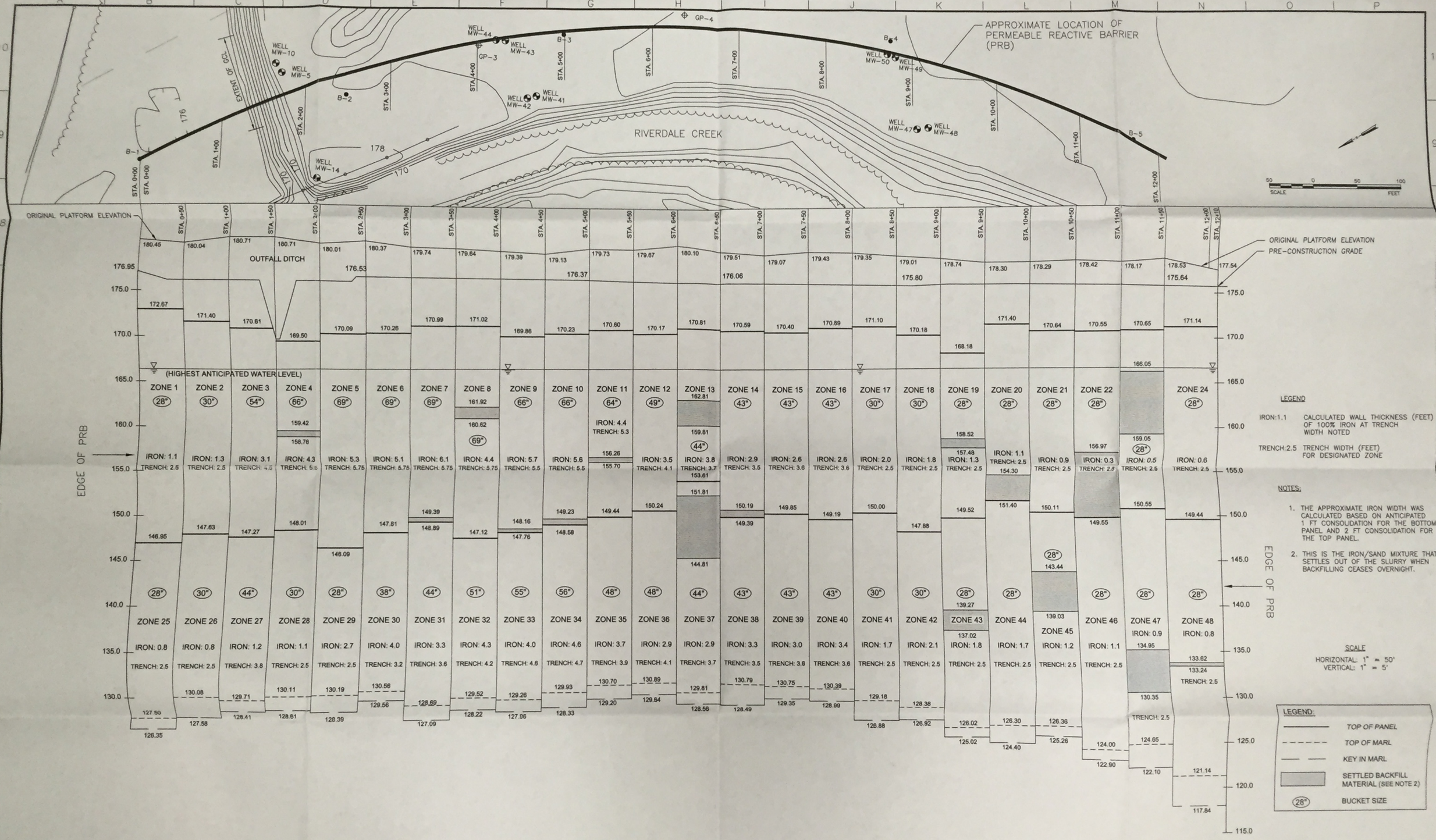
- Site restoration – Most disturbed areas were hydro-seeded after they were graded. Areas that were inaccessible for hydro-seeding were seeded manually. Silt fence on the western limits of work was removed except around drainage swales. Most silt fence on the south end of the outfall ditch was repaired and kept in place. The silt fence would be removed after substantial vegetation had been restored to the Site. Heavy equipment was decontaminated at the staging area before being shipped off-site. Non-hazardous debris was either hauled off-site for disposal or burned (select wood debris only) on-site in accordance to City of Grenada Fire Department regulations.

- Groundwater monitoring wells were installed in the PRB as a separate effort. The installation is anticipated to be included in the 2005 Annual Monitoring Report.

APPENDIX A

RECORD DRAWINGS

- Drawing A-1:
- Drawing A-2:
- Outfall Ditch As-Built
- As-Built Survey (March 23, 2005)



BROWN AND CALDWELL

SUBMITTED: _____ PROJECT MANAGER DATE: _____
APPROVED: _____ BROWN AND CALDWELL DATE: _____
APPROVED: _____ DATE: _____

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2"-SCALE ACCORDINGLY)

FILE 126467-02
DRAWN J THOMAS
DESIGNED J HOW
CHECKED _____
CHECKED W RAINES

MICHAEL JON FREEHLING — REGISTERED PROFESSIONAL ENGINEER — 16101 — STATE OF MISSISSIPPI
4/25/06
MICHAEL J. FREEHLING, P.E., P.G.
MISSISSIPPI LICENSE NO. 16101

REVISIONS					
ZONE	REV.	DESCRIPTION	BY	DATE	APP.

ARVIN MERITOR, INC.

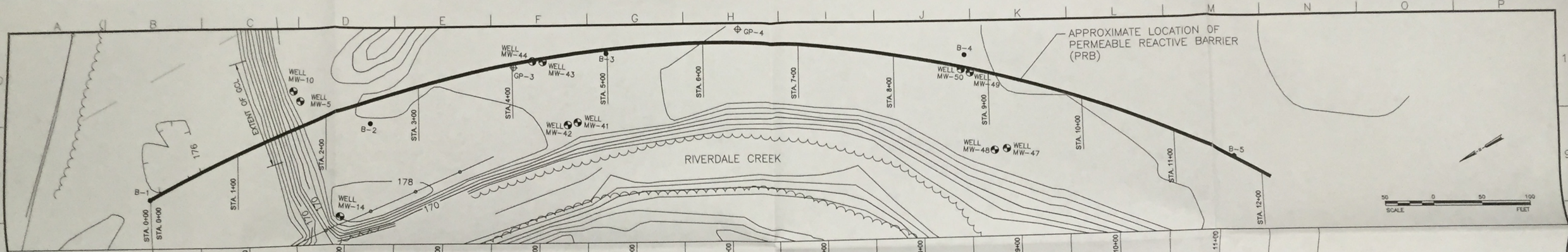
PERMEABLE REACTIVE BARRIER GROUNDWATER INTERIM MEASURE

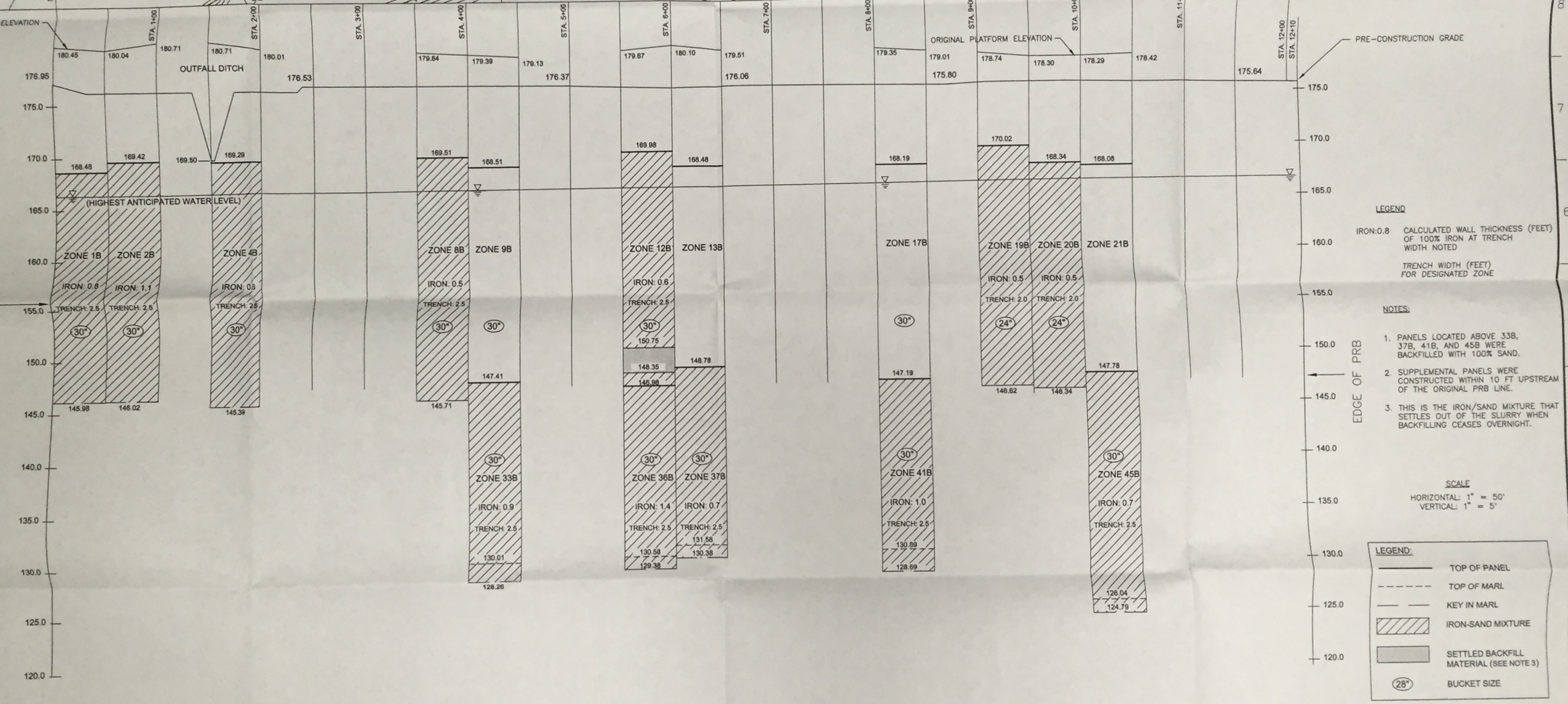
AS-BUILT DRAWING

PERMEABLE REACTIVE BARRIER PROFILE PRIMARY BARRIER

PROJECT NUMBER 126467.002
DRAWING NUMBER A-1
SHEET NUMBER

126467-02 9/21/05 1=50





LEGEND

IRON:0.8 CALCULATED WALL THICKNESS (FEET) OF 100% IRON AT TRENCH WIDTH NOTED

TRENCH WIDTH (FEET) FOR DESIGNATED ZONE

NOTES:

1. PANELS LOCATED ABOVE 33B, 37B, 41B, AND 45B WERE BACKFILLED WITH 100% SAND.
2. SUPPLEMENTAL PANELS WERE CONSTRUCTED WITHIN 10 FT UPSTREAM OF THE ORIGINAL PRB LINE.
3. THIS IS THE IRON/SAND MIXTURE THAT SETTLES OUT OF THE SLURRY WHEN BACKFILLING CEASES OVERNIGHT.

SCALE

HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'

LEGEND:

- TOP OF PANEL
- TOP OF MARL
- KEY IN MARL
- IRON-SAND MIXTURE
- SETTLED BACKFILL MATERIAL (SEE NOTE 3)
- (28") BUCKET SIZE

BROWN AND CALDWELL

SUBMITTED: _____ PROJECT MANAGER DATE: _____
APPROVED: _____ BROWN AND CALDWELL DATE: _____
APPROVED: _____ DATE: _____

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2"-SCALE ACCORDINGLY)

FILE 126467-03
DRAWN J THOMAS
DESIGNED J HOW
CHECKED _____
CHECKED W RAINES

MICHAEL JON FREEHLING, P.E., P.G.
MISSISSIPPI LICENSE NO. 16101

REVISIONS					
ZONE	REV.	DESCRIPTION	BY	DATE	APP.

ARVIN MERITOR, INC.

PERMEABLE REACTIVE BARRIER GROUNDWATER INTERIM MEASURE

AS-BUILT DRAWING

PERMEABLE REACTIVE BARRIER PROFILE SUPPLEMENTAL PANELS

PROJECT NUMBER 126467.002
DRAWING NUMBER A-2
SHEET NUMBER

126467-03 9/21/05 1=50

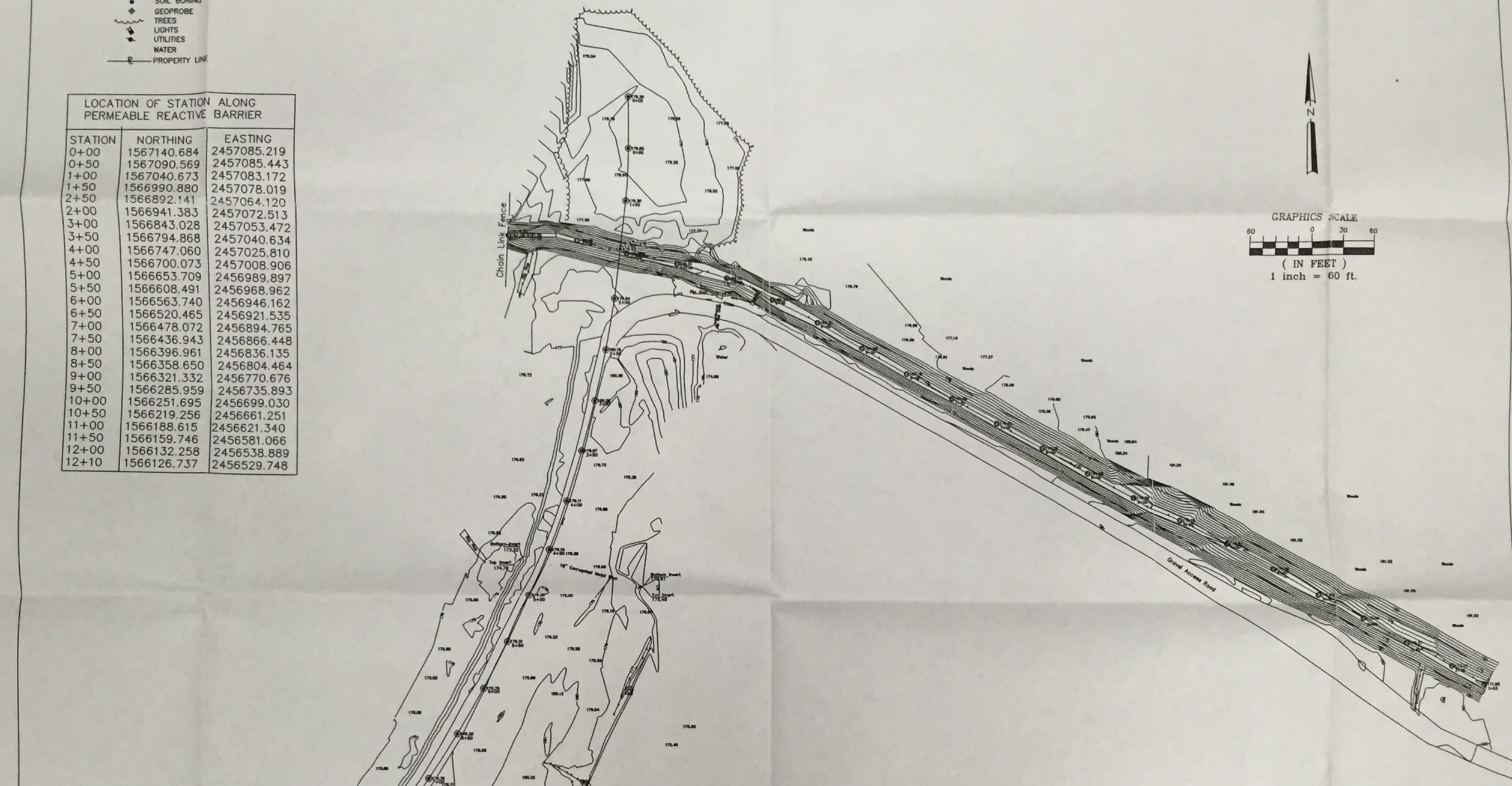
NOTE: ALL BEARINGS SHOWN ON THIS PLAT WERE DERIVED FROM GPS ObSERVATIONS AND ARE BASE ON STATE PLANE MS. WEST, NAD83 GRID

(XY Value are NAD83/93 MS. West, Feet, N,E) (Based From NGS Cors Stations)
(Bearing are State plane grid North Nad83/93
Verticle Datum is NAVD 88, (Based from NGS 2nd Order Control)

LEGEND

- EXISTING GRADE
- PERMEABLE REACTIVE BARRIER
- SILT FENCE
- LIMITS OF WORK
- CONTOURS
- FENCE
- MONITORING WELL
- SOIL BORING
- GEOPROBE
- TREES
- LIGHTS
- UTILITIES
- WATER
- PROPERTY LINE

LOCATION OF STATION ALONG PERMEABLE REACTIVE BARRIER		
STATION	NORTHING	EASTING
0+00	1567140.684	2457085.219
0+50	1567090.569	2457085.443
1+00	1567040.673	2457083.172
1+50	1566990.880	2457078.019
2+50	1566892.141	2457064.120
2+00	1566941.383	2457072.513
3+00	1566843.028	2457053.472
3+50	1566794.868	2457040.634
4+00	1566747.060	2457025.810
4+50	1566700.073	2457008.906
5+00	1566653.709	2456989.897
5+50	1566608.491	2456968.962
6+00	1566563.740	2456946.162
6+50	1566520.465	2456921.535
7+00	1566478.072	2456894.765
7+50	1566436.943	2456866.448
8+00	1566396.961	2456836.135
8+50	1566358.650	2456804.464
9+00	1566321.332	2456770.676
9+50	1566285.959	2456735.893
10+00	1566251.695	2456699.030
10+50	1566219.256	2456661.251
11+00	1566188.615	2456621.340
11+50	1566159.746	2456581.066
12+00	1566132.258	2456538.889
12+10	1566126.737	2456529.748



N

GRAPHICS SCALE
60 0 30 60
(IN FEET)
1 inch = 60 ft.

Stations along Ditch			
Northing	Easting	Elevation	Station
1566567.915	2457917.376	,171.650	1+63
1566585.402	2457885.447	,172.270	2+00
1566607.359	2457840.838	,172.570	2+50
1566631.520	2457796.872	,172.020	3+00
1566656.351	2457753.453	,171.600	3+50
1566681.437	2457710.240	,170.920	4+00
1566705.714	2457666.494	,170.920	4+50
1566728.274	2457621.938	,170.790	5+00
1566749.976	2457577.169	,170.200	5+50
1566773.510	2457533.302	,169.980	6+00
1566798.273	2457489.926	,170.230	6+50
1566822.477	2457446.049	,170.030	7+00
1566846.670	2457402.346	,169.990	7+50
1566870.893	2457358.634	,169.750	8+00
1566895.926	2457315.298	,169.500	8+50
1566920.947	2457271.951	,169.200	9+00
1566943.623	2457227.623	,169.200	9+50
1566963.301	2457181.661	,169.000	10+00
1566976.688	2457133.419	,169.010	10+50
1566986.511	2457084.450	,169.090	11+00
1566987.820	2457077.750	,169.000	11+06.83PBR
1566999.044	2457036.090	,168.900	11+50
1567003.507	2456986.727	,167.500	12+00
1567003.177	2456969.874	,167.000	12+16.85

CHAD A. WOODS
REGISTERED PROFESSIONAL LAND SURVEYOR
PLS-02716
STATE OF MISSISSIPPI

PREPARED BY: CHAD A. WOODS
470 Vaiden - Kilmichael Rd.
KILMICHAEL, MISSISSIPPI 39747

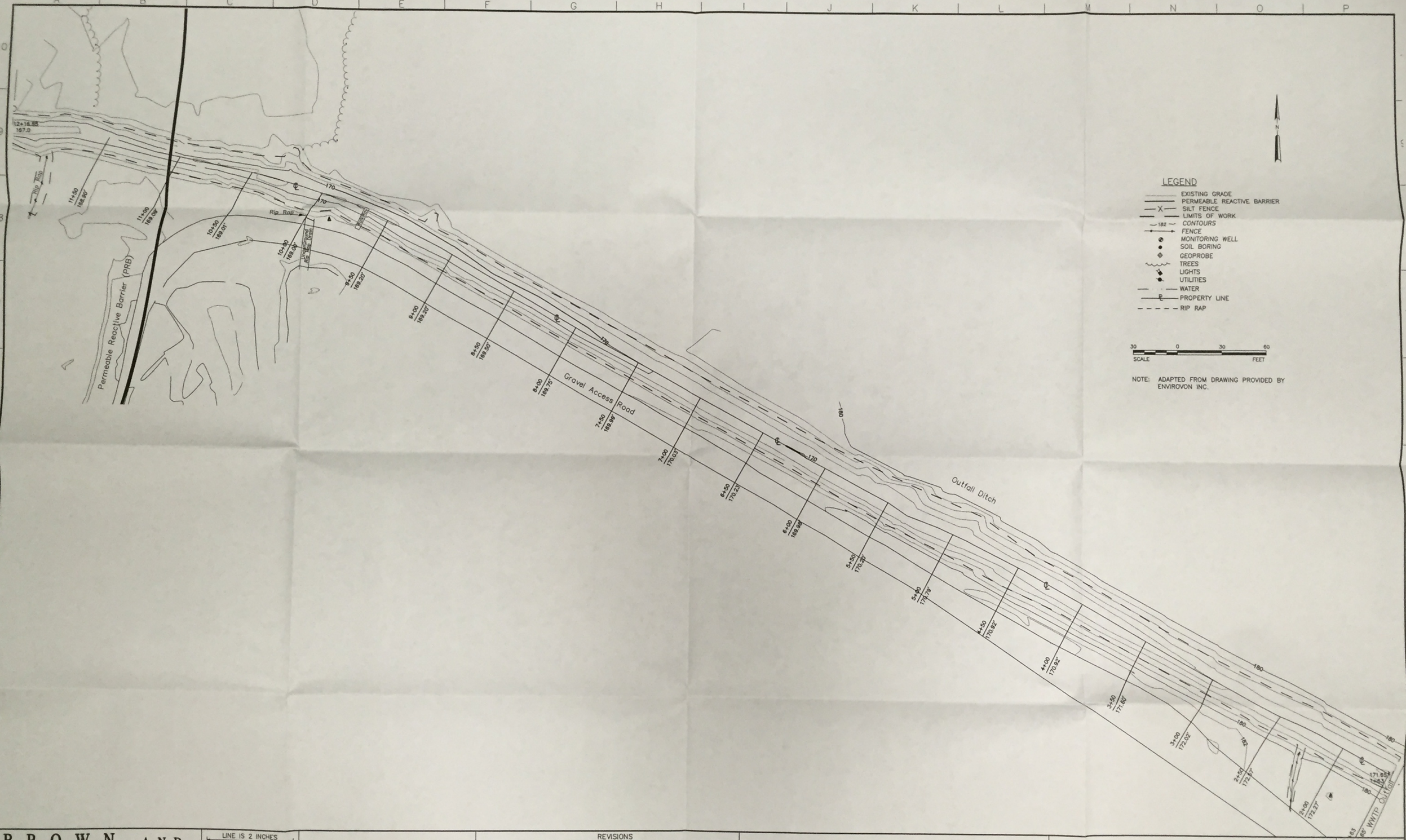
I certify that this survey was actually made on the ground as per record description and is correct to the best of my knowledge.

CHAD A WOODS PLS-02716

LAND SURVEYOR PLS-02716 STATE OF MISSISSIPPI

DRAWN BY: CAW	CHECKED BY: CAW	JOB NO. 98-008
SCALE: 60'	DATE: MARCH 23, 2005	

2005-01 As-Built Survey - SHEET 1



LEGEND

- EXISTING GRADE
- PERMEABLE REACTIVE BARRIER
- SILT FENCE
- LIMITS OF WORK
- 182 CONTOURS
- FENCE
- MONITORING WELL
- SOIL BORING
- GEOPROBE
- TREES
- LIGHTS
- UTILITIES
- WATER
- PROPERTY LINE
- RIP RAP

30 0 30 60
SCALE FEET

NOTE: ADAPTED FROM DRAWING PROVIDED BY ENVIROVON INC.

BROWN AND CALDWELL

SUBMITTED: _____ DATE: _____ PROJECT MANAGER
APPROVED: _____ DATE: _____ BROWN AND CALDWELL
APPROVED: _____ DATE: _____

126467-08 02-17-08 JLT

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2"-SCALE ACCORDINGLY)

FILE
DRAWN J. THOMAS
DESIGNED
CHECKED
CHECKED M. FREEHLING

MICHAEL JON FREEHLING — CERTIFIED PROFESSIONAL ENGINEER — STATE OF MISSISSIPPI
MICHAEL J. FREEHLING, P.E., P.G.
MISSISSIPPI LICENSE NO. 16101

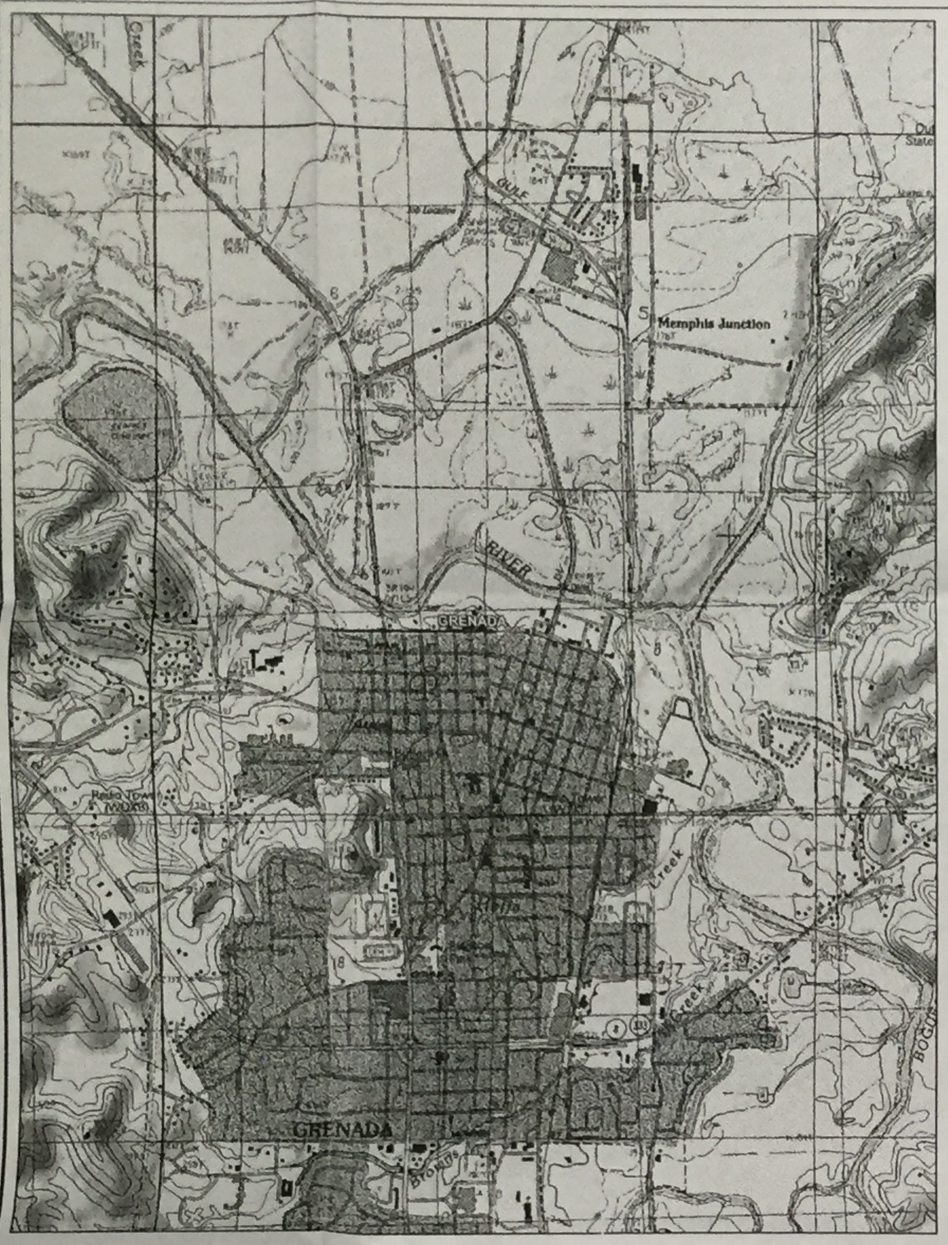
REVISIONS					
ZONE	REV.	DESCRIPTION	BY	DATE	APP.

ARVIN MERITOR, INC.

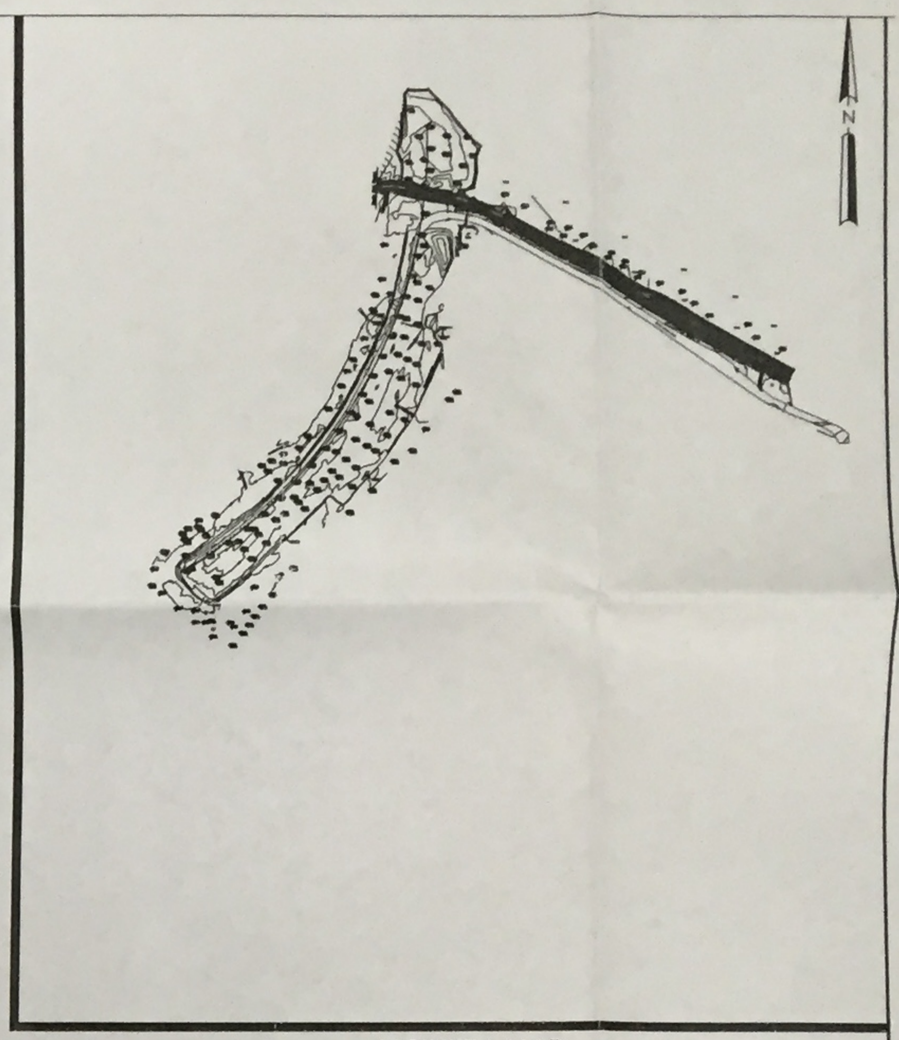
PERMEABLE REACTIVE BARRIER GROUNDWATER INTERIM MEASURE

OUTFALL DITCH AS BUILT

PROJECT NUMBER **126467.002**
DRAWING NUMBER **A-3**
SHEET NUMBER



LOCATION MAP
SCALE: NONE
Grenada, Mississippi



VICINITY MAP

AS-BUILT TOPOGRAPHIC SURVEY FOR PERMEABLE REACTIVE BARRIER

PREPARED FOR

ENVIROCON, INC.
WEST CHICAGO, IL 60185

PREPARED BY

CWA AND SURVEYING & MAPPING
470 Valden - Kilmichael, RD.
Kilmichael, Mississippi 39747
(662) 262-4563

March 23, 2005

LIST OF DRAWINGS

DRAWING NO.	DESCRIPTION
2005-01	As-Built Survey - SHEET 1
2005-02	As-Built Survey & Brown & Cawidwell Survey - SHEET 2

I certify that this survey was actually made on the ground as per record description and is correct to the best of my knowledge.

Chad H. Wood

LAND SURVEYOR
PLS-02716
STATE OF MISSISSIPPI

APPENDIX B

PERMEABLE REACTIVE BARRIER PANEL SUMMARY

APPENDIX B.
PRB Panel and Repairs Summary
Construction Report for the Permeable Reactive Barrier
Groundwater Interim measure
Grenada, Mississippi

PRB PANEL SUMMARY

Section	Panel		Field Design wt. (tons)	Actual wt. (tons)
	1	Top	99.82	99.00
0+00 to 0+50	25	Bottom	37.84	58.10
		Total	137.66	157.10
	2	Top	142.14	108.34
0+50 to 1+00	26	Bottom	34.56	51.00
		Total	176.70	159.34
	3	Top	284.29	246.00
1+00 to 1+50	27	Bottom	53.01	73.84
		Total	337.30	319.84
	4	Top	344.14	312.00
1+50 to 2+00	28	Bottom	58.83	72.00
		Total	402.97	384.00
	5	Top	344.14	433.50
2+00 to 2+50	29	Bottom	139.15	162.00
		Total	483.29	595.50
	6	Top	344.14	390.00
2+50 to 3+00	30	Bottom	198.36	245.42
		Total	542.50	635.42
	7	Top	351.62	450.00
3+00 to 3+50	31	Bottom	255.22	252.00
		Total	606.84	702.00
	8	Top	344.14	355.50
3+50 to 4+00	32	Bottom	281.30	276.00
		Total	625.44	631.50
	9	Top	351.62	422.40
4+00 to 4+50	33	Bottom	311.36	273.00
		Total	662.98	695.40
	10	Top	336.66	414.00
4+50 to 5+00	34	Bottom	313.11	318.00
		Total	649.77	732.00
	11	Top	321.69	316.50
5+00 to 5+50	35	Bottom	247.31	252.00
		Total	569.00	568.50
	12	Top	306.73	235.50
5+50 to 6+00	36	Bottom	241.06	202.50
		Total	547.79	438.00
	13	Top	246.88	221.94
6+00 to 6+50	37	Bottom	243.19	244.50
		Total	490.07	466.44
	14	Top	172.07	210.75
6+50 to 7+00	38	Bottom	230.67	234.00
		Total	402.74	444.75
	15	Top	157.11	180.00
7+00 to 7+50	39	Bottom	194.92	210.30
		Total	352.03	390.30
	16	Top	142.14	189.00
7+50 to 8+00	40	Bottom	179.55	234.30
		Total	321.69	423.30
	17	Top	119.70	142.50
8+00 to 8+50	41	Bottom	150.37	135.00
		Total	270.07	277.50
	18	Top	119.70	135.00
8+50 to 9+00	42	Bottom	135.78	149.92
		Total	255.48	284.92
	19	Top	112.22	81.00
9+00 to 9+50	43	Bottom	141.40	151.50
		Total	253.62	232.50
	20	Top	97.26	72.00
9+50 to 10+00	44	Bottom	137.17	154.55
		Total	234.43	226.55
	21	Top	59.85	60.00
10+00 to 10+50	45	Bottom	107.23	105.00
		Total	167.08	165.00
	22	Top	37.41	24.00
10+50 to 11+00	46	Bottom	77.27	102.00
		Total	114.68	126.00
	23	Top	37.41	31.50
11+00 to 11+50	47	Bottom	70.82	91.50
		Total	108.23	123.00
	24	Top	46.27	54.00
11+50 to 12+10	48	Bottom	76.93	114.00
		Total	123.20	168.00

SUPPLEMENTAL PANELS

Panel		Field Design wt. (tons)	Actual wt. (tons)
1B	Top	38.39	67.50
25	Bottom	0.00	0.00
	Total	38.39	67.50
2B	Top	46.07	90.00
26	Bottom	0.00	0.00
	Total	46.07	90.00
4B	Top	39.38	51.00
28	Bottom	0.00	0.00
	Total	39.38	51.00
8B	Top	39.38	44.05
32	Bottom	0.00	0.00
	Total	39.38	44.05
9	Top	0.00	0.00
33B	Bottom	35.14	63.00
	Total	35.14	63.00
12B	Top	46.07	48.00
36B	Bottom	51.77	87.00
	Total	97.84	135.00
13	Top	0.00	0.00
37B	Bottom	42.49	49.65
	Total	42.49	49.65
17	Top	0.00	0.00
41B	Bottom	34.18	72.00
	Total	34.18	72.00
19B	Top	30.71	42.00
43	Bottom	0.00	0.00
	Total	30.71	42.00
20B	Top	30.71	43.50
44	Bottom	0.00	0.00
	Total	30.71	43.50
21	Top	0.00	0.00
45B	Bottom	40.60	61.50
	Total	40.60	61.50

APPENDIX C

DAILY FIELD REPORTS

- **PRB Construction (Sep. 2004 to Mar. 2005)**

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 8-31-04

DAY Tuesday

WEATHER: Partly cloudy, humid

TEMPERATURE: 75 am 85 noon 85 pm

ITEMS WORKED ON:

- Clear and Grub
- ☐ Erosion Control
- Excavation and Backfill
- ☐ Temporary Road Construction
- ☐ Demolition
- ☐ Haul and Off-site Disposal
- ☐ Paving
- ☐ Geomembrane Installation
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

Armstead Townes

DESCRIPTION OF WORK:

Trailer was delivered to the Site and is now located near the entrace gate along the outfall ditch. Temporary mail box was installed across Highway 332 from the gate. Soil samples (clay gravel, concrete sand, general fill, stone) were collected at Townes borrow pits by Envirocon.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

Jimmy How **8-31-04**
Signature of Preparer Date

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH, REA, DRS, MJF

DATE: 9-1-04

DAY Wednesday

WEATHER: Partly cloudy, humid

TEMPERATURE: 80 am 85 noon 90 pm

ITEMS WORKED ON:

- Clear and Grub
- ☐ Erosion Control
- Excavation and Backfill
- ☐ Temporary Road Construction
- ☐ Demolition
- ☐ Haul and Off-site Disposal
- ☐ Paving
- ☐ Geomembrane Installation
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

John Bozick, Mike Duchenne, Don Williams

DESCRIPTION OF WORK:

Second trailer was delivered to the Site and is parked closer to the entrance gate. Envirocon trailer equipment was also delivered to the Site. BC, Envirocon, ETI , ArvinMeritor and Grenada Mfg. had pre-construction meeting in the afternoon and did a walk through around the iron storage area and the PRB area.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

Jimmy How **9-1-04**
Signature of Preparer Date

J. M How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH, MJF

DATE: 9-2-04

DAY Thursday

WEATHER: Partly cloudy, humid

TEMPERATURE: 80 am 85 noon 90 pm

ITEMS WORKED ON:

- Clear and Grub
- ☐ Erosion Control
- Excavation and Backfill
- ☐ Temporary Road Construction
- ☐ Demolition
- ☐ Haul and Off-site Disposal
- ☐ Paving
- ☐ Geomembrane Installation
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

_____

_____

_____

DESCRIPTION OF WORK:

No work was performed at the Site. MJF an JH inspect iron filings bags.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

_____

_____

Jimmy How **9-2-04**
Signature of Preparer Date

J. mHow

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 9-3-04

DAY Friday

WEATHER: Overcast

TEMPERATURE: 80 am 85 noon 85 pm

ITEMS WORKED ON:

- ☒ Clear and Grub
- ☐ Erosion Control
- Excavation and Backfill
- ☐ Temporary Road Construction
- ☐ Demolition
- ☐ Haul and Off-site Disposal
- ☐ Paving
- ☐ Geomembrane Installation
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

_____

_____

_____

DESCRIPTION OF WORK:

PRB area was mowed (bush hog). Three iron samples were collected from the stock at Grenada Manufacturing for iron/sand porosity analysis. Three split samples were also collected for gradation analysis.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

Jimmy How **9-3-04**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 9-7-04

DAY Tuesday

WEATHER: Partly cloudy

TEMPERATURE: 80 am 90 noon 90 pm

ITEMS WORKED ON:

- ☒ Clear and Grub
- ☐ Erosion Control
- Excavation and Backfill
- ☐ Temporary Road Construction
- ☐ Demolition
- ☐ Haul and Off-site Disposal
- ☐ Paving
- ☐ Geomembrane Installation
- ☒ Surveying
- ☐ Seeding and Site restoration

VISITORS:

_____

_____

_____

DESCRIPTION OF WORK:

Branches were trimmed along the sides of the current access road. The surveyor did a recon of the work site. A trench was dug from the power meter to the trailers by Hayward Electric. Electrical cables were installed prior to trench backfill.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

_____

_____

Jimmy How **9-7-04**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 9-8-04

DAY Wednesday

WEATHER: Clear sky

TEMPERATURE: 70 am 80 noon 80 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☐ Excavation and Backfill
- ☐ Temporary Road Construction
- ☐ Demolition
- ☐ Haul and Off-site Disposal
- ☐ Paving
- ☐ Geomembrane Installation
- ☒ Surveying
- ☐ Seeding and Site restoration

VISITORS:

_____

_____

_____

DESCRIPTION OF WORK:

Iron samples for gradation (sieve analysis) were collected by BC from the iron bags at the various storage areas (parking lot, shed, warehouse, blue building, storage room) inside Grenada Mfg plant. Limits of work and PRB centerline were staked by the surveyor.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

_____

_____

Jimmy How **9-8-04**
Signature of Preparer Date

J. mHow

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 9-9-04

DAY Thursday

WEATHER: Clear sky

TEMPERATURE: 65 am 80 noon 85 pm

ITEMS WORKED ON:

- ☒ Clear and Grub
- ☒ Erosion Control
- Excavation and Backfill
- ☐ Temporary Road Construction
- ☐ Demolition
- ☐ Haul and Off-site Disposal
- ☐ Paving
- ☐ Geomembrane Installation
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

_____

_____

_____

DESCRIPTION OF WORK:

Regular silt fence was installed along the western limits of work adjacent to the PRB centerline. A few trees were cut at the PRB/ditch intersection area. Wooden mats were delivered and stored along the access road.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

_____

_____

Jimmy How **9-9-04**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 9-10-04

DAY Friday

WEATHER: Clear sky

TEMPERATURE: 75 am 85 noon 90 pm

ITEMS WORKED ON:

- ☒ Clear and Grub
- Erosion Control
- Excavation and Backfill
- ☐ Temporary Road Construction
- ☐ Demolition
- ☐ Haul and Off-site Disposal
- ☐ Paving
- ☐ Geomembrane Installation
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

Armstead Townes from Townes pit.

DESCRIPTION OF WORK:

Trees were cut at the PRB/ditch intersection area. Tree trunks and logs were hauled off-site. An abandoned telephone/power pole (engraved: "GR-60, SPC-10, 4+40") was observed between the dummy line (bermed area) and the fence along Riverdale creek. Wooden mats were installed over US 200/17.5 geotextile along access road.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

Jimmy How **9-10-04**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 9-11-04

DAY Saturday

WEATHER: Clear sky

TEMPERATURE: 75 am 90 noon 90 pm

ITEMS WORKED ON:

- ☒ Clear and Grub
- Erosion Control
- Excavation and Backfill
- ☐ Temporary Road Construction
- ☒ Demolition
- ☐ Haul and Off-site Disposal
- ☐ Paving
- ☐ Geomembrane Installation
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

_____

_____

_____

DESCRIPTION OF WORK:

Additional trees were cut at the PRB/ditch intersection area including the dummy line (bermed area). Northern portion of the dummy line was excavated and graded. Tree trunks and logs were hauled off-site. The abandoned telephone/power pole was removed and placed outside the silt fence on the western limits of work . The fence perpendicular to the PRB centerline was removed. Stumps along the PRB centerline were removed. Root balls, branches and grubbed materials were stacked approximately between stations 4+00 and 5+00 east of the PRB centerline. Additional wooden mats were installed over US 200/17.5 geotextile along access road. Unused geotextile rolls were covered with plastic. The metal cover and concrete pad of well MW-5 was slightly damaged during tree cutting. The wooden stairs south of wells MW-5 and MW-10 was also damaged during tree cutting.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

_____

_____

Jimmy How **9-11-04**
Signature of Preparer Date

Jimmy How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH, SPW

DATE: 9-13-04

DAY Monday

WEATHER: Partly cloudy

TEMPERATURE: 80 am 85 noon 85 pm

ITEMS WORKED ON:

- ☒ Clear and Grub
- ☒ Erosion Control
- Excavation and Backfill
- ☐ Temporary Road Construction
- Demolition
- ☐ Haul and Off-site Disposal
- ☐ Paving
- ☐ Geomembrane Installation
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

_____

_____

_____

DESCRIPTION OF WORK:

Additional silt fence was installed on the western limits of work area. Soil from the dummy line (berm) was graded on cleared area with stumps around the PRB/outfall intersection. Envirocon started clearing the northern side of the outfall ditch. Additional mats were delivered and stored near the dummy line.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

_____

_____

Jimmy How **9-13-04**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 9-14-04

DAY Tuesday

WEATHER: Overcast am, partly cloudy pm

TEMPERATURE: 75 am 80 noon 80 pm

ITEMS WORKED ON:

- ☒ Clear and Grub
- ☒ Erosion Control
- Excavation and Backfill
- ☐ Temporary Road Construction
- Demolition
- ☐ Haul and Off-site Disposal
- ☐ Paving
- ☐ Geomembrane Installation
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

_____

_____

_____

DESCRIPTION OF WORK:

Soil from the dummy line (berm) was graded on cleared area with stumps around the PRB/outfall intersection. Additional silt fence was installed on the western limits of work. Silt fence from station 4+00 to 3+00 was shifted approximately 20 feet to the west towards the limits of work. A few trees were cut in the northern side of the ditch and hauled off-site. The gate fence located between the northen side of ditch and railroad was removed. Additional mats on geotextile were installed on the access road and on the nothwest corner of the PRB/ditch intersection cleared area.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

_____

_____

Jimmy How **9-14-04**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 9-15-04

DAY Wednesday

WEATHER: partly cloudy

TEMPERATURE: 80 am 85 noon 90 pm

ITEMS WORKED ON:

- ☒ Clear and Grub
- Erosion Control
- Excavation and Backfill
- ☐ Temporary Road Construction
- Demolition
- ☐ Haul and Off-site Disposal
- ☐ Paving
- ☐ Geomembrane Installation
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

_____

_____

_____

DESCRIPTION OF WORK:

Soil graded around cleared area was compacted prior to installing additional mats on the western limits of work. Trees were cut on the northern side of the ditch. Trunks and logs were hauled off-site.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

_____

_____

Jimmy How **9-15-04**
Signature of Preparer Date
Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 9-16-04

DAY Thursday

WEATHER: overcast and light rain

TEMPERATURE: 80 am 85 noon 80 pm

ITEMS WORKED ON:

- ☒ Clear and Grub
- Erosion Control
- Excavation and Backfill
- ☒ Work Platform
- Demolition
- ☐ Haul and Off-site Disposal
- ☐ Paving
- ☐ Geomembrane Installation
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

_____

_____

_____

DESCRIPTION OF WORK:

Additional trees were cut on the northern side of the ditch. Additional wooden mats were installed on the western limits of work. Envirocon started placing and compacting clay gravel on geoxtextile (US 230) on both sides of the PRB centerline for workplatform construction (approximately from station 4+00 to 6+00). Width of work platform is approximately 36 ft (18 ft on each side of the PRB centerline).

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

Jimmy How **9-16-04**
Signature of Preparer Date
Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH, SPW

DATE: 9-17-04

DAY Friday

WEATHER: Partly cloudy

TEMPERATURE: 70 am 85 noon 85 pm

ITEMS WORKED ON:

- ☒ Clear and Grub
- Erosion Control
- Excavation and Backfill
- ☒ Work Platform
- Demolition
- ☐ Haul and Off-site Disposal
- ☐ Paving
- ☐ Geomembrane Installation
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

Richard Simmons Drilling

Midsouth

DESCRIPTION OF WORK:

First lift of clay gravel was installed from stations 4+00 to 12+10. Compaction and moisture content tests were conducted by Midsouth at Station 4+00. Moisture content @ station 4+30 exceeded optimum moisture content. Soil tests were stopped and compacted lifts were scarified. Additional trees were cut on the northern side of the ditch and hauled off-site. Richard Simmons drillers inspected well MW-5 and indicated that the cover and the cement pad needed repair.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

Jimmy How **9-17-04**
Signature of Preparer Date

J. How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH, SPW

DATE: 9-18-04

DAY Saturday

WEATHER: Partly cloudy

TEMPERATURE: 60 am 80 noon 85 pm

ITEMS WORKED ON:

- ☒ Clear and Grub
- Erosion Control
- Excavation and Backfill
- ☒ Work Platform
- Demolition
- ☐ Haul and Off-site Disposal
- ☐ Paving
- ☐ Geomembrane Installation
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

Richard Simmons Drilling

Midsouth

DESCRIPTION OF WORK:

Well MW-5 was repaired by Richard Simmons. Metal cover and cement pad were replaced. Piezometer GP-4 at station 6+30 along PRB was abandoned by Richard Simmons. Second lift of clay gravel was installed from stations 4+00 to 11+00. First lift of clay gravel was installed from stations 3+00 to 4+00. Compaction and moisture content tests were conducted from stations 4+00 to 11+00 and passed. Addditional trees from the northern side of the ditch were cut and hauled off-site. A temporary wooden bridge was installed across the ditch south of well MW-10.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

Jimmy How **9-18-04**
Signature of Preparer Date

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 9-20-04

DAY Monday

WEATHER: Partly cloudy

TEMPERATURE: 60 am 85 noon 85 pm

ITEMS WORKED ON:

- ☒ Clear and Grub
- Erosion Control
- Excavation and Backfill
- ☒ Work Platform
- Demolition
- ☐ Haul and Off-site Disposal
- ☐ Paving
- ☐ Geomembrane Installation
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

Midsouth

Armstead Townes

DESCRIPTION OF WORK:

First lift of clay gravel was installed from 2+50 to 3+00. Second lift was installed from 11+00 to 12+10, as well as from stations 3+00 to 4+00. Third lift of clay gravel was installed from 8+50 to station 11+00. Envirocon indicated that Midsouth conducted compaction and moisture content tests on compacted lifts done on 9-18-04. The tests passed, as reported. Some pipes for slurry transfer were fused on-site. Additional clear and grub occurred on the northern side of the ditch.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

Jimmy How **9-20-04**
Signature of Preparer Date

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 9-21-04

DAY Tuesday

WEATHER: Partly cloudy

TEMPERATURE: 60 am 80 noon 80 pm

ITEMS WORKED ON:

- ☒ Clear and Grub
- Erosion Control
- Excavation and Backfill
- ☒ Work Platform
- Demolition
- ☐ Haul and Off-site Disposal
- ☐ Paving
- ☐ Geomembrane Installation
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

Midsouth

DESCRIPTION OF WORK:

Third lift of compacted clay gravel was placed from 2+50 to 7+00. Fourth lift of compacted clay gravel was placed from 7+00 to 12+10. Envirocon indicated that the clay gravel thickness would be modified to 30 inches (up from 28 inches); 610s layer thickness would be modified to 6 inches (down from 8 inches). Compaction and moisture content tests were conducted by Midsouth. Soil was excavated from the dummy line (bermed area) on the northern side of the ditch. Trees were cut and hauled off-site. Additional pipes for slurry transfer were fused.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

Jimmy How **9-21-04**
Signature of Preparer Date

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 9-22-04

DAY Wednesday

WEATHER: Partly cloudy

TEMPERATURE: 60 am 85 noon 85 pm

ITEMS WORKED ON:

- ☒ Clear and Grub
- Erosion Control
- Excavation and Backfill
- ☒ Work Platform
- Demolition
- ☐ Haul and Off-site Disposal
- ☐ Paving
- ☐ Geomembrane Installation
- ☒ Surveying
- ☐ Seeding and Site restoration

VISITORS:

Midsouth

Chad Woods and Associates

DESCRIPTION OF WORK:

Fifth lift of compacted clay gravel was placed from 7+00 to 12+10. Compaction and moisture content tests were conducted by Midsouth. Soil was excavated from the dummy line (bermed area) on the northern side of the ditch. Silt fence was installed around the dummy line on the northern side of the ditch. Additional pipes for slurry transfer were fused.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

Jimmy How **9-22-04**
Signature of Preparer Date
Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 9-23-04

DAY Thursday

WEATHER: Partly cloudy am, overcast pm

TEMPERATURE: 60 am 80 noon 80 pm

ITEMS WORKED ON:

- ☒ Clear and Grub
- Erosion Control
- Excavation and Backfill
- ☒ Work Platform
- Demolition
- ☐ Haul and Off-site Disposal
- ☐ Paving
- ☐ Geomembrane Installation
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

Midsouth

DESCRIPTION OF WORK:

Fifth lift of compacted clay gravel was placed from 4+00 to 7+00. Compaction and moisture content tests were conducted by Midsouth. Limestone gravel (610) was delivered and unloaded on 5th lift of clay gravel from 10+00 to 12+00. A few spots on the silt fence trench were not backfilled (Re: silt fence on the northern side of the outfall ditch). Additional pipes for slurry and water transfer were fused. Fused pipes were placed along access road next to the fence line. Crawler crane and its accessories were delivered to the site.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

Jimmy How **9-23-04**
Signature of Preparer Date

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 9-24-04

DAY Friday

WEATHER: overcast

TEMPERATURE: 80 am 80 noon 80 pm

ITEMS WORKED ON:

- ☒ Clear and Grub
- Erosion Control
- Excavation and Backfill
- ☒ Work Platform
- Demolition
- ☐ Haul and Off-site Disposal
- ☐ Paving
- ☐ Geomembrane Installation
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

Midsouth

DESCRIPTION OF WORK:

Fifth lift of clay gravel was placed from 2+00 to 4+00. Midsouth was on the site for compaction and moisture content test for the fifth lifts. Moisture content test failed @ 2+50. Limestone gravel (610), 6th lift or last lift, was spread from 12+00 to about 7+00. Fused pipes (4" dia.) were placed on the western side of the work platform. Pipes were also extended from the staging area to the fire hydrant across Hwy 332 via the storm water culvert. The silt fence trench on the north side of the outfall ditch was backfilled in the afternoon.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

Jimmy How **9-24-04**
Signature of Preparer Date
Jimmy How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 9-25-04

DAY Saturday

WEATHER: Cloudy

TEMPERATURE: 75 am 80 noon 80 pm

ITEMS WORKED ON:

- ☒ Clear and Grub
- Erosion Control
- Excavation and Backfill
- Work Platform
- Demolition
- ☐ Haul and Off-site Disposal
- ☐ Paving
- ☐ Geomembrane Installation
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

Midsouth

DESCRIPTION OF WORK:

Clear and grub were resumed on the northern side of the ditch. Trees were cut on the banks of the ditch. The storage shed and the drums on palettes were moved to the staging area. Last lift of the work platform consisting of limestone gravel (610s) were tested from 12+00 to 7+00 by Midsouth. Several spots of the 610s lift were observed to be less than 6". Envirocon indicated that the total thickness of the work platform would be 3 ft, and that some areas on the work platform might consist > 30" of clay gravel and < 6" of 610s. Compaction results passed, however, moisture content for the 610s lift were observed to be < 2% optimum moisture content at the tested stations. The unpaved road on the south side of the Site was barricaded by the abandoned power/telephone pole removed near the dummy line. Signs and caution tape were also added.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

Jimmy How **9-25-04**
Signature of Preparer Date

Jim How

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 9-27-04

DAY Monday

WEATHER: Clear sky

TEMPERATURE: 60 am 80 noon 85 pm

ITEMS WORKED ON:

- ☒ Clear and Grub
- ☒ Erosion Control
- Excavation and Backfill
- ☒ Work Platform
- Demolition
- ☐ Haul and Off-site Disposal
- ☐ Paving
- ☐ Geomembrane Installation
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

Midsouth

DESCRIPTION OF WORK:

Last lift of work platform consisting of compacted 610s was installed from 7+00 to 4+00. The compacted lifts were tested by Midsouth. Results were comparable to the readings obtained the day before from the lifts tested on 12+00 to 7+00, i.e., compaction was over 92% but moisture content were < 2% optimum moisture content. Steel culvert (36" dia.) to be installed in invert of outfall ditch was welded at 3+00 of the PRB centerline. Additional clear and grub were resumed on the northern side of the ditch. Additional trees on the southern edge of the outfall ditch were cut and stored on the eastern side of the work platform. Additional pipes for slurry and water transfer were also fused. Three drainage swales consisting of silt fence and R-3 riprap on geotextile were installed on the western limits of work (i.e., at 11+00, 5+00, and 2+00). The swales at 11+00 and 5+00 discharge to Riverdale creek. The swale at 2+00 discharges to the outfall ditch. A rock filter berm consisting of R-3 riprap and AASHTO 57 was installed in outfall invert approximately 10 feet upstream from the fence located above the outfall mouth. A geotextile fabric separates the R-3 and 57 stones.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

Jimmy How 9-27-04
Signature of Preparer Date
Jim How

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 9-28-04

DAY Tuesday

WEATHER: Clear sky

TEMPERATURE: 60 am 85 noon 90 pm

ITEMS WORKED ON:

- ☒ Clear and Grub
- ☒ Erosion Control
- Excavation and Backfill
- Work Platform
- Demolition
- ☐ Haul and Off-site Disposal
- ☐ Paving
- ☐ Geomembrane Installation
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

Trainer for 40-hr Hazwoper

DESCRIPTION OF WORK:

The water level in the outfall ditch was observed running on top of the rock filter berm. Envirocon removed the fabric that separated the R-3 and 57 stones in the rock filter berm. The R-3 and 57 stones were spread in the invert of the ditch over a length of approx 12 feet and a few inches below the water level. Gabion rocks (6"- 8") were filled on top of the R-3 and 57 stones mixture. Additional 57 stones were filled upstream of the gabion rocks. The modified rock filter berm is about 3.5 ' high from the bottom of the invert. The three (3) drainage swales constructed the day before are about 20 ft long, 4 ft wide and 3 ft deep max. Spoils from the swales construction were placed on the eastern side of the work platform. Additional 4" pipes were fused. The water pipe that ran across the access road from the ditch to the staging area was buried beneath the mats. Stumps on the southern side of the ditch were removed and stacked on the eastern side of the platform.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

Jimmy How **9-28-04**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 9-29-04

DAY Wednesday

WEATHER: Clear sky

TEMPERATURE: 60 am 80 noon 80 pm

ITEMS WORKED ON:

- Clear and Grub
- Erosion Control
- Excavation and Backfill
- Work Platform
- Demolition
- ☐ Haul and Off-site Disposal
- ☐ Paving
- ☐ Geomembrane Installation
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

Trainer for 40-hr Hazwoper

DESCRIPTION OF WORK:

Additional pipes were fused on the site. Water line was connected to the fire hydrant across Hwy 332.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

Jimmy How **9-29-04**
Signature of Preparer Date
Jimmy How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 9-30-04

DAY Thursday

WEATHER: Clear sky

TEMPERATURE: 50 am 80 noon 85 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☐ Trench Excavation
- ☐ Work Platform
- ☐ Concrete Stops
- ☐ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

Trainer for 40-hr Hazwoper

DESCRIPTION OF WORK:

Alkaline water was prepared in one frac tank (20,000 gallons) which consisted of water and soda ash. The alkaline water was pumped into a second frac tank (20,000 gallons) and was mixed with Supermud to form the slurry water. The Supermud slurry was then tested for Marsh Funnel Viscosity which exceeded 40 seconds. Envirocon started constructing the berm on the eastern limits of work from 12+10 to 8+00.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

Jimmy How **9-30-04**
Signature of Preparer Date

Jimmy How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 10-01-04

DAY Friday

WEATHER: Cloudy

TEMPERATURE: 55 am 80 noon 85 pm

ITEMS WORKED ON:

- ☒ Clear and Grub
- Erosion Control
- ☒ Trench Excavation
- Work Platform
- ☒ Concrete Stops
- ☐ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

Trainer for 40-hr Hazwoper

Armstead Townes

DESCRIPTION OF WORK:

Envirocon resumed constructing berm on the eastern limits of work from 8+00 to 4+00. Additional trees were cut on the banks of the ditch and were staged on the eastern side of the work platform. Geotextile fabric US 230 was rolled on the spoils area at station 11+50. Trench for concrete stop was also excavated at 11+50. Slurry water (viscocity >40 sec) prepared the day before was filled into trench. Spoils from the trench was placed on geotextile fabric on the eastern side of the work platform. Depth of the trench at one time reached about 45 ft before receding to about 32 feet. Envirocon then filled the open trench with new batch of slurry (viscosity > 50 sec) till the top of the platform before stopping work. Trench was then covered.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

Jimmy How **10-01-04**
Signature of Preparer Date
J. How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 10-02-04

DAY Saturday

WEATHER: Cloudy

TEMPERATURE: 50 am 85 noon 85 pm

ITEMS WORKED ON:

- ☒ Clear and Grub
- Erosion Control
- ☒ Trench Excavation
- Work Platform
- ☒ Concrete Stops
- ☐ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

_____

_____

_____

DESCRIPTION OF WORK:

Envirocon resumed constructing berm on the eastern limits of work from 4+00 to 2+50. Additional trees were cut on the banks of the ditch and were staged on the eastern side of the work platform. The 1000-gallon fuel tank and its containment were moved from the staging area to the southwest end of the limits of work. Trench for concrete stop at 11+50 was backfilled with spoils and covered with a wooden mat. Displaced slurry was ponded on the eastern side of the platform. Envirocon started excavating trench for concrete stop at station 11+00 using more viscous Supermud slurry (viscosity > 55 sec). Spoils were placed on geotextile on the eastern side of the work platform. Depth once reached 34 ft before receding to 29 ft. White sandy excavated material was observed when the walls were reported to recede to 29 ft. Work stopped and the slurry trench was covered with a wooden mat. The 1000-gallon fuel tank and its containment were moved to the work platform at station 10+00 from the southwest end of the limits of work for refueling in the afternoon.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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_____

Jimmy How **10-02-04**
Signature of Preparer Date

Jimhow

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 10-04-04

DAY Monday

WEATHER: Clear Sky

TEMPERATURE: 50 am 80 noon 85 pm

ITEMS WORKED ON:

- ☒ Clear and Grub
- Erosion Control
- Trench Excavation
- Work Platform
- Concrete Stops
- ☐ Iron/Sand Backfill
- Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

_____

_____

_____

DESCRIPTION OF WORK:

Additional trees were cut on the banks of the ditch and were staged on the eastern side of the work platform. Tremie chute was moved to the western side of the limits of work. The long reach stick was assembled on the trackhoe. New batch of slurry was made and stored in frac tank. Slurry consisted of soda ash, super mud and guar gum. The trenches at station 11+00 and 11+50 were still covered with mats. A four in. pipe for surface water diversion was placed on the northern side of the ditch. The pipe effluent was placed downstream of the rock filter berm. A water pump was placed on a wooden mat across the banks of the ditch adjacent downstream of the existing wooden stairs.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

_____

_____

Jimmy How **10-04-04**
Signature of Preparer Date
Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 10-05-04

DAY Tuesday

WEATHER: Clear Sky

TEMPERATURE: 65 am 85 noon 90 pm

ITEMS WORKED ON:

- ☒ Clear and Grub
- ☒ Erosion Control
- ☒ Trench Excavation
- Work Platform
- ☒ Concrete Stops
- ☐ Iron/Sand Backfill
- Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

Bob Ryan (Polymer Drilling Systems)

DESCRIPTION OF WORK:

Debris on the banks of the ditch were moved on the eastern side of the work platform. Silt fence was installed on southern side of outfall ditch (4+00 to 10+00). Water downstream of the wooden stairs was diverted to the downstream end of the rock filter berm. Part of the invert (invert was slightly curved) was excavated to align the bottom of the ditch to facilitate culvert placement. The invert spoils were staged temporarily on the south side of the ditch. The 36" culvert was then placed in ditch and covered partially with general fill. Water diversion was discontinued and water was allowed to run through the culvert. Trench excavation for concrete stop was resumed at 11+00 with new batch of slurry consisting of water, soda ash, supermud and guar. Reported viscosity was > 100. Envirocon reported hitting marl at 57 ft below top of platform . Excavation was stopped at 60 ft below top of platform. Spoils were staged on eastern side of platform on geotextile. Open trench was filled with slurry and covered with wooden mat. The PC-750 trackhoe was equipped with long reach stick.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

Jimmy How **10-05-04**
Signature of Preparer Date

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH, MJF

DATE: 10-06-04

DAY Wednesday

WEATHER: Clear Sky

TEMPERATURE: 60 am 85 noon 90 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☒ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☒ Concrete Stops
- ☐ Iron/Sand Backfill
- ☐ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

Bob Ryan (Polymer Drilling Systems)

Don Williams

DESCRIPTION OF WORK:

Envirocon resumed silt fence installation on south end of the ditch. The 36" culvert in the invert of the ditch was reportedly wrapped with geotextile prior to general fill placement (~ 40 ft long on center). Bentonite was also reportedly placed between the geotextile and the culvert. Concrete was poured in trench at 11+00 and was flushed with top of platform. Displaced slurry was pumped back to frac tank for reuse. Trench for concrete stop was then excavated at 10+50. Marl was reportedly observed at 55 ft below top of platform at 10+50. Spoils were placed on geotextile fabric on the eastern side of the platform. Excavation was stopped and trench was filled with slurry. Envirocon, Grenada Mfg and BC had progress meeting from 13:30 to 17:00.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other

Jimmy How **10-06-04**
Signature of Preparer Date

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 10-07-04

DAY Thursday

WEATHER: Cloudy

TEMPERATURE: 70 am 85 noon 80 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☒ Work Platform
- ☒ Concrete Stops
- ☐ Iron/Sand Backfill
- ☐ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

Bob Ryan (Polymer Drilling Systems)

Cecil Shelton (Grenada County)

DESCRIPTION OF WORK:

Envirocon resumed trench excavation for concrete stop at 10+ 50. Approximate top of marl was reported at 55 ft from top of platform the day before. Trench was excavated to an approximate depth of 58 ft from top of platform. Concrete was then poured in trench and was flushed with top of platform. Displaced slurry was pumped back to frac tank for reuse. Spoils were placed on geotextile fabric on the eastern side of the platform. Trench excavation for concrete stop (2nd trial with new batch of slurry) was restarted at 11+ 50. Maximum depth recorded at 11+ 50 was 45 ft from top of platform before walls caved in to a reported depth of 30 ft. The platform around the trench at 11+ 50 was raised by an additional 4 ft, consisting of general fill. Bubbles were noticed in slurry trench at 11+ 50. General fill placement on 36" culvert in outfall ditch was also resumed (About 4 ft of fill is left before it's flushed with existing grade). Pad on MW-10 was observed to be slightly damaged. Metal cover of MW-10 appeared to be intact. Concrete was also poured on the ground at the staging area on north end of the Site.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

Jimmy How **10-07-04**
Signature of Preparer Date
J. How

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 10-08-04

DAY Friday

WEATHER: Overcast

TEMPERATURE: 70 am 75 noon 70 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☒ Work Platform
- ☒ Concrete Stops
- ☐ Iron/Sand Backfill
- ☐ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

Bob Ryan (Polymer Drilling Systems)

DESCRIPTION OF WORK:

Envirocon resumed trench excavation for concrete stop at 11 + 50. Approximate top of marl was reported at 60 ft from top of original platform. Trench was excavated till a reported depth of 63 ft from top of original platform. Spoils were staged on geotextile on the eastern side of the platform. Concrete was then poured into slurry trench till flushed with top of original platform elevation. Displaced slurry was pumped back into frac tank. Slurry trench for concrete stop was started at 10+00. Reported depth from top of platform at 10+00 was ~ 35 ft before work stopped. The northern and southern side of the outfall ditch was bridged with general fill at 1+50 where the 36" culvert was placed.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

Jimmy How **10-08-04**
Signature of Preparer Date

Jimmy How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 10-09-04

DAY Saturday

WEATHER: Rain

TEMPERATURE: 65 am 70 noon 70 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☒ Concrete Stops
- ☐ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Rainfall occurred during most of the day. Spoils on eastern side of platform were not covered with plastic. Concrete surface at 11+50 was covered with general fill. Envirocon resumed trench excavation for concrete stop at 10+00. Top of marl was reported at 55 ft from top of platform. Trench at 10+00 was reportedly excavated to a depth of 58 ft from top of platform. Concrete was then poured into slurry trench at 10+00. Displaced slurry was pumped into frac tank. Spoils were moved to the eastern side of platform on geotextile fabric. Slurry trench excavation for concrete stop was also started at 9+50. Top of marl was reported at 55 ft from top of platform at 9+50. Crawler crane underwent repair at the end of the day and work was stopped. Slurry trench at 9+50 was covered with mat. Water was also observed flowing over the rock filter berm at the ditch effluent. Some 57 stones on the rock filter were scoured and were repaired by Envirocon.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jimmy How **10-09-04**
Signature of Preparer Date
Jimhow

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 10-11-04

DAY Monday

WEATHER: Scattered showers throughout the day

TEMPERATURE: 75 am 80 noon 80 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☒ Concrete Stops
- ☐ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Scattered showers were observed throughout the day. Spoils on the eastern side of the work platform were not covered with plastic. Envirocon resumed slurry trench excavation at 9+50 in the morning. Top of marl was reported at 55 ft from top of platform. Slurry trench was excavated to a reported depth of 58 ft from top of platform at 9+50 prior to concrete placement. Spoils were placed on geotextile on the east side of the work platform. Displaced slurry was pumped to frac tank and concrete stop at 9+50 was covered with wooden mat. Slurry trench excavation at 9+00 was started in the afternoon. One cable on the clam bucket broke off and excavation stopped temporarily. Top of the marl at 9+00 was reported at 54 ft from top of platform after cable was fixed. Slurry trench at 9+00 was then excavated to a reported depth of 58 ft from top of platform. Spoils were stockpiled on geotextile fabric on eastern side of work platform. Concrete was poured at 9+00 till flushed with platform elevation prior to mat cover placement. Displaced slurry at 9+00 was pumped back to frac tank. Chutes on concrete trucks were washed on the northern side of the Site (staging area).

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jimmy How Signature of Preparer

Jimmy How

10-11-04 Date

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 10-12-04

DAY Tuesday

WEATHER: Scattered showers throughout the day

TEMPERATURE: 70 am 75 noon 75 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☒ Concrete Stops
- ☐ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Scattered showers were observed throughout the day. Some iron bags were moved from the Grenada mfg main building to the staging area on the north side of the construction site and were covered with plastic. Envirocon started slurry trench excavation for concrete stop at 6+50. Top of marl was reported at 50 ft from top of platform. Trench was dug to a reported depth of 53 ft from top of platform. Spoils were placed on geotextile on eastern side of work platform. Concrete was then poured an displaced slurry was pumped into frac tank. The 1000-gallon diesel tank was replaced. Rust were reportedly observed in the old tank. Envirocon started slurry trench excavation for concrete stop at 6+00 in the afternoon.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jimmy How **10-12-04**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 10-13-04

DAY Wednesday

WEATHER: Overcast

TEMPERATURE: 60 am 65 noon 60 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☒ Concrete Stops
- ☐ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Sand from Sardis was delivered to the Site and was stockpiled on the staging area on the north side of the construction site. The Tadano crane was observed on the parking lot at the Grenada mfg plant. Envirocon indicated that the crane would be moved back to the construction site. Additional iron bags were moved from the Grenada mfg main building to the staging area and were covered with plastic. Envirocon excavated and poured concrete at 6+00 and 5+50. Top of marl was reported at 51 ft from top of platform at both stations. Slurry trench was dug till 54 ft from top of platform at both locations prior to concrete pour. Wood was observed at approximately 30 ft below top of platform at 5+50. Slurry trench excavation at 5+00 was started in late afternoon. Spoils from trench excavation were placed on geotextile on the eastern side of the platform. Displaced slurry was pumped to frac tank.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jimmy How **10-13-04**
Signature of Preparer Date
J. m How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 10-14-04

DAY Thursday

WEATHER: Overcast

TEMPERATURE: 50 am 60 noon 60 pm

ITEMS WORKED ON:

- ☒ Clear and Grub
- Erosion Control
- ☒ Trench Excavation
- Work Platform
- ☒ Concrete Stops
- ☐ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Additional iron bags were moved from the Grenada mfg main building to the staging area, and were covered with plastic. Limestone gravel (610s), i.e., last lift, were compacted from 2+50 to 4+00. Additional fill was compaced on the bridge over the outfall ditch. A berm was constructed on the north side of the PRB at 0+00. Platform was regraded from 11+00 to 9+00 after concrete stops were cured. Concrete was poured at 5+00. Displaced slurry was pumped into frac tank and spoils were placed on geotextile on eastern side of platform. Top of marl at 5+00 was reported at 49 ft from top of platform. Bottom of trench prior to concrete pour at 5+00 was reported at 52 ft from top of platform. Slurry trench for concrete stop was also dug at 4+50. Top of marl at 4+50 was reported at 49 ft from top of platform. Slurry trench at 4+50 was then covered and work was stopped.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jimmy How — Signature of Preparer

10-14-04 — Date

J. How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 10-15-04

DAY Friday

WEATHER: Clear sky

TEMPERATURE: 35 am 60 noon 75 pm

ITEMS WORKED ON:

- ☒ Clear and Grub
- Erosion Control
- ☒ Trench Excavation
- ☒ Work Platform
- ☒ Concrete Stops
- ☐ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☒ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Additional iron bags were moved from the Grenada mfg main building to the staging area, and were covered with plastic. First lift of clay gravel was placed from 0+00 to 2+00. A berm to contain spoils was constructed north and east end of the PRB line (0+00 to 1+00). Last lift of limestone gravel (610s) on platform from 2+50 to 4+00 was tested for compaction and moisture content by Midsouth. Concrete was poured at 4+50 and 4+00. Spoils were placed on geotextile on eastern side of platform, and displaced slurry was pumped back to frac tank. Top of marl at 4+50 and 4+00 was reported at 49 ft and 49.5 ft from top of platform, respectively. Trench at 4+50 and 4+00 was reportedly dug till 53.5 ft and 53 ft from top of platform, respectively. In late afternoon, Envirocon started slurry (guar only as reported) trench excavation for PRB from 9+00 to 9+50 using the 28" bucket loaded on the long stick excavator.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jimmy How **10-15-04**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 10-16-04

DAY Saturday

WEATHER: Clear sky

TEMPERATURE: 50am 65 noon 75 pm

ITEMS WORKED ON:

- ☒ Clear and Grub
- Erosion Control
- ☒ Trench Excavation
- ☒ Work Platform
- ☒ Concrete Stops
- ☐ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Additional iron bags were moved from the Grenada mfg main building to the staging area, and were covered with plastic. First lift of clay gravel from 0+00 to 2+00 was tested by Midsouth for compaction and moisture content in the morning. Second lift of clay gravel was then spread in the same area. A temporary ditch into the berm at 0+00 was constructed to improve drainage to the north. Envirocon indicated that the ditch would be filled once excavation is started in that area. Concrete was poured at 3+50. Spoils were placed on geotextile on eastern side of platform and slurry was pumped back to frac tank. Top of marl at 3+50 was reported at 49 ft and the trench was dug till 52.5 ft from top of platform. Slurry trench excavation for concrete stop at 3+00 was started in the afternoon. One cable on the clam bucket broke and was repaired. The dummy line at 3+00 was excavated to increase room for spoils. Slurry trench excavation for PRB from 9+00 to 9+50 was also resumed.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jimmy How **10-16-04**
Signature of Preparer Date

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 10-18-04

DAY Monday

WEATHER: Cloudy am; Clear sky pm

TEMPERATURE: 75 am 80 noon 80 pm

ITEMS WORKED ON:

- ☒ Clear and Grub
- Erosion Control
- ☒ Trench Excavation
- Work Platform
- ☒ Concrete Stops
- ☐ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

Mike Duchene (ETI)

DESCRIPTION OF WORK:

Additional iron bags were moved from the Grenada mfg main building to the western limits of work at 3+00. Concrete was poured at 3+00. Slurry trench excavation for concrete stop was started at 2+50. Dummy line at 2+50 was dug to increase room for spoils area. Slurry trench excavation for PRB from 9+00 to 9+50 was resumed. Depth was reported at 51 ft from 9+00 to 9+50 before long stick equipment broke down. Excavated material from the trench was placed on geotextile on eastern end of platform.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

Jimmy How **10-18-04**
Signature of Preparer Date

J. How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 10-19-04

DAY Tuesday

WEATHER: Scattered thunderstorms

TEMPERATURE: 75 am 80 noon 80 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☒ Concrete Stops
- ☐ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

Mike Duchene (ETI)

DESCRIPTION OF WORK:

Scattered thunderstorms occurred throughout the day. Additional iron bags were moved from the Grenada mfg main building to the western limits of work at 3+00. Concrete was poured at 2+50. Slurry trench excavation was started at 2+00. Spoils were placed on geotextile on the eastern side of the platform. Spoils from 10+50 to 11+50, 9+00 to 10+00, 6+00 to 5+00, 5+00 to 4+00, 4+00 to 3+00, and 3+00 to 2+00 were sampled for TCE analysis.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

Jimmy How **10-19-04**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 10-20-04

DAY Wednesday

WEATHER: Foggy (am), clear sky (pm)

TEMPERATURE: 75 am 85 noon 85 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☒ Concrete Stops
- ☐ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

Mike Duchene (ETI)

DESCRIPTION OF WORK:

Concrete was poured at 2+00. Slurry trench excavation was started at 1+50. Spoils were placed on geotextile on the eastern side of the platform. The conveyor belt and concrete truck mixer were set up on the staging area on the north side of the site. The scale on the Komatsu wheel loader was repaired and reportedly calibrated. One (1) CY of iron/sand mixture for panel 43 was fed from the conveyor belt into one of the concrete trucks to test equipment. Samples of the mixture were collected and tested. Target % iron is 78.8% (by weight) or 72% by volume. Measured % iron was 75.6% (by weight) or 68.2% by volume. Mixture will be reportedly adjusted to meet target % iron within +/- 1% (by volume) prior to backfill.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

Jimmy How — Signature of Preparer

10-20-04 — Date

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 10-21-04

DAY Thursday

WEATHER: Overcast (am), clear sky (pm)

TEMPERATURE: 75 am 80 noon 80 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☒ Concrete Stops
- ☒ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

Don Williams

DESCRIPTION OF WORK:

Concrete was poured at 1+50. Slurry trench excavation was started at 1+00. Spoils were placed on geotextile on the eastern side of the platform. Iron/sand mixing for panel 43 (bottom zone from 9+00 to 9+50) was resumed. Prior to iron/sand backfill, six samples were collected and tested. The average % iron (by wt.) of the six samples was 80.8%. Target % iron for panel 43 is 78.8%. Trench was cleaned out of sediment. Three 6" PVC recirculation wells (~ 60 ft in length) with screens were placed approximately at the midpoint of the PRB trench from 9+00 to 9+50, and were spaced at approximately 12 ft. A 4" square hollow steel pipe were also placed inside the 6" casing to minimize bowing. Iron/sand were backfilled into the PRB trench at panel 43 (bottom zone from 9+00 to 9+50) via tremie. Average depth to bottom of the trench was 53.5' prior to iron/sand backfill and 41.5' before work stopped. Eight (8) truck loads of iron/sand were backfilled, totaling approximately 54.5 CY before work stopped. A total of 5 samples were also collected from truck chutes during backfilling. The average % iron (by wt.) of the 5 samples was 78.56%.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

Jimmy How **10-21-04**
Signature of Preparer Date

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 10-22-04

DAY Friday

WEATHER: Foggy am, partly cloudy pm

TEMPERATURE: 75 am 85 noon 85 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☒ Concrete Stops
- ☒ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Concrete was poured at 1+00. Slurry trench excavation was started at 0+50. Spoils were placed on geotextile on the eastern side of the platform. Iron and sand mixing for panel 43 (bottom zone from 9+00 to 9+50) was resumed. Iron and sand were backfilled into the PRB trench at panel 43 via tremie. Average depth to bottom of the trench was 41.5 ft the night before when work stopped. Average depth observed in the morning was approximately 39 ft. Envirocon indicated that change in depth was due to consolidation, and suspended iron and sand settling. One sample collected at 40 ft showed 42.2% iron by wt. (design is 78.8%). Panel 43 was backfilled till an approximate depth of 29 ft from top of platform (approx. 2.45 ft over design depth of 31.45 ft). One sample of iron/sand backfill collected about 50 ft showed 86% iron by wt. Iron and sand backfill for Panel 19 (top zone) was then started. Eleven samples for Panel 19 iron/sand mix showed % iron ranging from 70.6% to 73.6% by wt. (design is 68.5%). Depth ranged from 19.5 - 24 ft when backfill for Panel 19 was stopped for the day. Target depth for Panel 19 is 10.45 ft.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jimmy How **10-22-04**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 10-23-04

DAY Saturday

WEATHER: Overcast (am), heavy rain (pm)

TEMPERATURE: 75 am 75 noon 75 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☒ Concrete Stops
- ☒ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Concrete was poured at 0+50. Spoils were placed on geotextile on the eastern side of the platform. Depth of Panel 19 (top zone from 9+00 to 9+50) ranged from 19.5 ft to 24 ft the day before when work stopped. Depth before work resumed in the morning ranged from 18.5 ft to 21.5 ft. Envirocon indicated that changes in the depth were due to iron/sand settling and consolidation. A sample was collected at 19.5 ft and showed iron content of 69.1% by wt (design is 68.5%). Iron and sand were backfilled till a depth of about 10.34 ft for Panel 19. A sample was collected @ 26 ft and showed iron content of 71.4 % by wt (design is 68.5%). Geotextile fabric (US 230) was placed on top of Panel 19 approximately 18" to 24" from each end of the concrete stops prior to sand backfill. Steel pipes were removed from the wells and the casings were cut below platform grade.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jimmy How **10-23-04**
Signature of Preparer Date

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 10-25-04

DAY Monday

WEATHER: Partly cloudy, humid

TEMPERATURE: 80 am 85 noon 85 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☒ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☐ Concrete Stops
- ☒ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Trees and stumps were observed to be burning on eastern side of the platform at 8+00. Envirocon indicated that tree burning started the day before. A compressor was placed on the platform and air was fed to the burning ashes. Minor erosion was observed on the dirt around the 36" culvert in the invert of the outfall ditch mainly to rainfall during the weekend. Depth to top of marl was reported at 52 ft below top of platform on 10-23-04. Depth to bottom of trench was observed to be 45 ft. Sediments were cleaned out prior to recirculation wells installation. Trench was dug approximately 1.1 ft into the marl (i.e., 53.1 ft) after clean-out. Iron-sand mix was then backfilled in panel 45 (10+00 to 10+50) to an average depth of 39.33 ft before work stopped. Nine trucks of iron-sand mix for panel 45 was backfilled. PRB slurry trench excavation was also started from 11+00 to 11+50. A dirt ditch was dug on the southwest end of the Site outside the limits of work to improve drainage to Riverdale creek. Envirocon indicated that geotextile and gravel would be installed to minimize erosion from the ditch.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jimmy How **10-25-04**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 10-26-04

DAY Tuesday

WEATHER: Partly cloudy, humid

TEMPERATURE: 80 am 85 noon 85 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☒ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☐ Concrete Stops
- ☒ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

PRB slurry trench excavation from 11+00 to 11+50 was resumed till depth reached approximately 53 ft from top of platform. Iron-sand backfill from 10+00 to 10+50 was completed. The design amount of iron for the top panel (Panel 21) was modified. The total iron by wt. in Panel 21 was increased by 10% to try to compensate for over-break in the concrete end stops. A pump was inserted in the middle recirculation well of the PRB trench from 9+00 to 9+50.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jimmy How **10-26-04**
Signature of Preparer Date

J. How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 10-27-04

DAY Wednesday

WEATHER: Partly cloudy, humid

TEMPERATURE: 80 am 85 noon 85 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☒ Work Platform
- ☐ Concrete Stops
- ☒ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☒ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

PRB trench excavation from 11+00 to 11+50 was resumed. Depth to top of marl was reported at approximately 54 ft from top of platform. Marl was dug to an average depth of 56.25 ft from top of platform after final cleanout. Three recirculation wells were installed in trench from 11+00 to 11+50 prior to iron-sand backfill for bottom panel (Panel 47). Average depth of Panel 47 was reported at 48 ft when work stopped. Gravel work platform was graded from 0+00 to 2+00. PRB trench excavation was started from 6+00 to 6+50. Enzyme was reportedly added to the wells from 9+00 to 9+50 and water was recirculated. Geotextile fabric was also placed on Panel 21 (10+00 to 10+50) prior to sand backfill.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

Jimmy How **10-27-04**
Signature of Preparer Date

J. How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 10-28-04

DAY Thursday

WEATHER: Partly cloudy, humid

TEMPERATURE: 80 am 90 noon 90 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☐ Concrete Stops
- ☒ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Burning of stumps and trees were resumed. PRB trench from 6+00 to 6+50 was also resumed. Enzyme breaker was reportedly added to the recirculation wells from 10+00 to 10+50. Panel 47 (bottom panel from 11+00 to 11+50) was completed. Preliminary estimate showed that an extra 53 tons of iron over the theoretical amount were backfilled in Panel 47. Iron content (by wt.) for Panel 23 (top panel from 11+00 to 11+50) was increased by 30% to compensate for concrete end stop over-break. Panel 23 was backfilled with iron-sand mix and average depth from top of platform was 19.3 ft before work stopped.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jimmy How **10-28-04**
Signature of Preparer Date

J. How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH, SAB

DATE: 10-29-04

DAY Friday

WEATHER: Partly cloudy

TEMPERATURE: 75 am 85 noon 80 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☒ Work Platform
- ☐ Concrete Stops
- ☒ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Iron-sand mix backfill for Panel 23 (11+00 to 11+50) was resumed and completed. Panel 23 was covered with geotextile fabric prior to sand backfill. Water with enzyme breaker LEB-H was recirculated at sections 9+00 to 9+50 and 10+00 to 10+50. Slurry trench excavation at section 6+00 to 6+50 was resumed and top of marl was reported around 50 ft. Several loads of iron bags from Grenada Mfg main building were unloaded around section 6+00 to 6+50. Iron-sand mix for top panel of section 6+00 to 6+50 was stockpiled and covered with tarp at the staging area. Second lift of clay gravel on work platform was graded and compacted from 0+00 to 2+00. Proctor test failed from 0+00 to 1+00. Clay gravel was determined to be too moist.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jimmy How **10-29-04**
Signature of Preparer Date
J. How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH, WJR

DATE: 10-30-04

DAY Saturday

WEATHER: Partly cloudy

TEMPERATURE: 75 am 80 noon 80 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☒ Work Platform
- ☐ Concrete Stops
- ☒ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Envirocon started backfilling the bottom panel (Panel 37) of section 6+00 to 6+50 with 100% iron. Average depth of Panel 37 was 35 ft before work stopped. Approximately 151 bags of iron (~226.5 tons) were backfilled. Section 9+50 to 10+00 was also excavated. Second lift of compacted clay gravel from 0+00 to 1+00 was tested. Moisture content was slightly > 2% over the optimum moisture content. Proctor was greater than 92%.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jimmy How **10-30-04**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 11-01-04

DAY Monday

WEATHER: scattered rain (am), partly cloudy (pm)

TEMPERATURE: 75 am 80 noon 80 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☒ Work Platform
- ☐ Concrete Stops
- ☒ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Some rain occurred the day before. Soundings taken in the morning showed that the average depth of section 6+00 to 6+50 was 28 ft. One sample was collected at 36 ft, 32 ft, 30 ft, and 28 ft. Magnetic separation tests showed % iron at those locations to be 89.7%, 85.7%, 80.8% and 67%, respectively. Sample results were discussed with ETI. Envirocon resumed backfilling Panel 27 of section 6+00 to 6+50 with 100% iron. A total of 163 bags of iron (including the 151 bags backfilled on 10-30-04) were added in Panel 27 and the average depth was 28.7 ft before the top panel (Panel 13) was started. The average depth of Panel 13 was 20 ft before work stopped.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jimmy How **11-01-04**
Signature of Preparer Date

J. How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 11-02-04

DAY Tuesday

WEATHER: scattered rain

TEMPERATURE: 75 am 75 noon 70 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☒ Work Platform
- ☐ Concrete Stops
- ☒ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Panel 13 (top panel of section 6+00 to 6+50) was completed. Average depth was 9 ft from top of panel. One sample was collected at 12 ft. Magnetic separation test showed % iron to be 88.8% by wt. Design % iron was 92.2% by wt. White pinkish sand fines were observed during the magnetic separation. Excavation for section 9+50 to 10+00 was resumed and top of marl was reported at 52 ft from top of platform. Three recirculation wells were installed after the cleanout. Average depth to marl was reported at 53.6 ft. Iron-sand mix for the bottom panel of section 9+50 to 10+00 (Panel 44) was prepared, stockpiled and covered on the north side of the Site.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jimmy How **11-02-04**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 11-03-04

DAY Wednesday

WEATHER: overcast am, light rain pm

TEMPERATURE: 75 am 70 noon 70 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☒ Work Platform
- ☐ Concrete Stops
- ☒ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Bottom panel (Panel 44) of section 9+50 to 10+00 was completed. Average depth was 29.4 ft after adjustment. Sample at 40 ft in Panel 44 was tested and showed % iron to be 82.9 % by wt. Target % iron was 75.5% by wt. Enzyme breaker was added to section 11+00 to 11+50. Excavation at section 10+50 to 11+00 was started. Iron-sand mix for the top panel (Panel 20) of section 9+50 to 10+00 was prepared (5 truck loads) and stockpiled in the concrete pen before work stopped.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

Jimmy How **11-03-04**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 11-04-04

DAY Thursday

WEATHER: overcast

TEMPERATURE: 50 am 55 noon 55 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☒ Work Platform
- ☐ Concrete Stops
- ☒ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Top panel (Panel 20) of section 9+50 to 10+00 was completed. Average depth after adjustment was approximately 8.9 ft below top of platform. Two samples were collected approximately 20 ft below top of platform at stations 9+85 and 9+75 and showed % iron by wt. to be 67.5% and 45.3%, respectively. Target % iron was 65.2%. Enzyme breaker was reportedly added to recirculation wells at section 11+00 to 11+50. PRB excavation from 10+50 to 11+00 was resumed and part of top of marl was reportedly reached at the mid-point of the section. Seven truck loads of iron-sand mix for the bottom panel (Panel 46) of section 10+50 to 11+00 were prepared and stockpiled on the concrete pen on the north side of the site. The seven truck loads were tested and results showed % iron by wt. to range from 38.9% to 67.6%. Target % iron by wt was 44.9%. Scale on the wheel loader bucket was reportedly recalibrated.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jimmy How **11-04-04**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 11-05-04

DAY Friday

WEATHER: Clear sky

TEMPERATURE: 45 am 65 noon 40 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☒ Work Platform
- ☐ Concrete Stops
- ☒ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Top of marl of section 10+50 to 11+00 was reported at approximately 54.3 ft. Trench was dug into marl till approximately 55.4 ft from top of platform. Three recirculation wells were installed in section 10+50 to 11+00 prior to backfilling iron-sand mix. Bottom panel (Panel 46) of section 10+50 to 11+00 was completed in the afternoon and two samples were collected; one at 30 ft deep at 10+90 and one at 40 ft at 10+85. Average depth of top of Panel 46 was approximately 31.25 ft. Limestone gravel (610s) was graded on the work platform from 0+00 to 2+00. Envirocon proposed using 610s instead of clay gravel for the remaining four lifts from 0+00 to 2+00. Envirocon indicated that R-3 riprap would be placed on the drainage ditch on the southwest end outside the limits of work once the ponded water dries up for better access.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jimmy How **11-05-04**
Signature of Preparer Date
Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 11-06-04

DAY Saturday

WEATHER: Clear sky

TEMPERATURE: 35 am 60 noon 50 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☐ Concrete Stops
- ☒ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Approximately 7 feet of sediment was observed overnight prior to backfilling top panel of section 10+50 to 11+00 (Depth changed approx. from 28 ft to 21 ft). Four samples were collected (i.e, two at 20 ft and two @ 15 ft). Results show %iron by wt. to be 13.3% and 30.3% @ 20 ft, and 23% and 27.4% @ 15 ft. Target %iron was 26.6%. Excavation of section 11+50 to 12+10 was resumed. Top of marl at 12+10 was reported at 61 ft from top of platform. Preliminary iron estimate backfilled showed that the top panel was short on iron. For subsequent sections, Envirocon proposed using compressed air to resuspend sediments prior to backfilling top panels.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jimmy How **11-06-04**
Signature of Preparer Date
Jhow

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 11-08-04

DAY Monday

WEATHER: Clear sky

TEMPERATURE: 45 am 75 noon 55 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☒ Work Platform
- ☐ Concrete Stops
- ☒ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Based on a conversation with Mike Duchene (ETI), it was indicated that the use of compressed air to resuspend sediments in the guar was not recommended. ETI recommended using air lift as a better alternative since it causes less disruption. Excavation of section 11+50 to 12+10 was resumed. Top of marl was reported at 56.9 ft. Trench was reportedly dug till 60.2 ft (i.e., 3.3 ft into marl). Third and fourth lift of work platform consisting of limestone (610s) were tested for density and moisture content. Midsouth indicated that density exceeded the specified 92%. Mositure content was reported to be below the optimum moisture content. Backfill of bottom panel (Panel 48) of section 11+50 to 12+10 was started in early afternoon. Average depth reached 44.8 ft before work stopped.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jimmy How **11-08-04**
Signature of Preparer Date

Jimmy How

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 11-09-04

DAY Tuesday

WEATHER: Clear sky

TEMPERATURE: 45 am 70 noon 60 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☒ Work Platform
- ☐ Concrete Stops
- ☒ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Soundings were conducted in section 11+50 to 12+10. Depths ranged from 38.75 to 41 ft. Immediaely after work stopped the day before, depths ranged from 42 to 48 ft. Samples were collected between the settled solids layer (today's soundings) and the depths readings recorded the day before (i.e. sample locations ranged from 41 to 48 ft) . The %iron by wt. ranged from 9.6% to 46.2%. Target %iron was 31.4%. Envirocon, ETI and BC had conference call to discuss methods of minimizing and/or removing settled solids. No backfilling or cleanout occurred at the bottom panel of section 11+50 to 12+10. Excavation of section 5+50 to 6+00 was resumed. Limestone (610s) lifts on work platform were rolled and compacted.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jimmy How **11-09-04**
Signature of Preparer Date

Jimmy How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 11-10-04

DAY Wednesday

WEATHER: Partly cloudy

TEMPERATURE: 50 am 80 noon 65 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☐ Concrete Stops
- ☒ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

The bottom panel (Panel 48) of section 11+50 to 12+10 was cleaned out approximately within 2 ft from the sounding depths recorded two nights before. Iron-sand backfill of Panel 48 was resumed and completed by early afternoon. Iron-sand backfill for the top panel (Panel 24) was then started. Rick Graves with Envirocon indicated that one of the truck loads of sand delivered by Sardis was the wrong type of sand. He estimated that about half a truck load of that sand might have been mixed with iron and backfilled in Panel 24 before the error was discovered. The remaining sand left was then reportedly scooped and moved to the concrete/trench cap sand stockpile. Excavation of section 5+50 to 6+00 was also resumed. Top of marl was reported at 49 ft. Backfill of Panel 24 was completed in the evening. Two samples were collected at 20 ft (sta. 11+65 and 11+80). The samples would be analyzed the next day.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jimmy How **11-10-04**
Signature of Preparer Date

J. How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 11-11-04

DAY Thursday

WEATHER: Partly cloudy, scattered showers pm

TEMPERATURE: 55 am 65 noon 60 pm

ITEMS WORKED ON:

- Clear and Grub
- Erosion Control
- ☒ Trench Excavation
- Work Platform
- Concrete Stops
- ☒ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☒ Surveying
- ☐ Seeding and Site restoration

VISITORS:

DESCRIPTION OF WORK:

Two samples collected at 20 ft (sta. 11+65 and 11+80) from Panel 24 (section 11+50 to 12+10) were tested and showed % iron content by wt. to be 34.2 and 31.8%, respectively. Target %iron was 31.4% by wt. Section 5+50 to 6+00 was cleaned out. Top of marl was reported at 49 ft and depth averaged 50.25 ft after clean-out. Backfill of bottom panel (Panel 36) was started in mid afternoon. Average depth was 43.5 ft before work stopped. Excavation of section 0+00 to 0+50 was also started in late afternoon.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other

Jimmy How **11-11-04**
Signature of Preparer Date
JimHow

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 11-12-04

DAY Friday

WEATHER: overcast

TEMPERATURE: 45 am 50 noon 45 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☐ Concrete Stops
- ☒ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Backfill of bottom panel (Panel 36) of section 5+50 to 6+00 was resumed in the morning after settled solids were cleaned out. Panel 36 was completed around mid-day. One 4" x 5' I-beam that was tied to one of the recirculating wells fell into the trench. Panel 36 was backfilled to an average depth of 32.15 ft (after adjustment). Two samples were collected: @ 40 ft at sta. 5+65 and 5+75. Results show % iron to be 89.2% and 89%, respectively. Target %iron was 95.1%. Backfill of the top panel (Panel 12) was resumed with 100% iron in mid-afternoon and completed in the evening. Panel 12 was backfilled to an average depth of 11.7 ft (after adjustment). Two samples were collected: @ 12 ft at sta. 5+70, and @ 12 ft at sta. 5+90. Results show % iron to be 71.6% and 90.1%, respectively. Fines were observed from the samples after drying.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jimmy How **11-12-04**
Signature of Preparer Date

Jimmy How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 11-13-04

DAY Saturday

WEATHER: overcast

TEMPERATURE: 55 am 60 noon 55 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☐ Concrete Stops
- ☒ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Backfill of section 0+00 to 0+50 was started. Envirocon indicated that elevations for the two ends of the section were not yet available from the surveyor. Elevations were estimated. Bottom panel (Panel 25) was backfilled with wet iron-sand mix. Envirocon indicated that a wet mix would provide a better uniform backfill. Slurry appeared to be diluted with the wet mix. Panel 25 was backfilled to average depth of 35.8 ft (after consolidation adjustment) before top panel (Panel 1) backfill. Two samples were collected from Panel 25 at a depth of 40 ft at sta. 0+10 and 0+30. Test results showed %iron to be 36.4% and 42.6%, respectively. Target %iron was 20.0%. Excavation of section 0+50 to 1+00 was also started prior to Panel 1 backfill. Backfill of Panel 1 was completed in late evening to an average depth of 9.6 ft (after consolidation adjustment). Two samples were collected from Panel 1 at a depth 20 ft at sta. 0+15 and 0+30. Test results showed %iron to be 47.2% and 47.7%, respectively.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jimmy How **11-13-04**
Signature of Preparer Date

Jimmy How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH, REA, DRS, MJF

DATE: 11-15-04

DAY Monday

WEATHER: partly cloudy

TEMPERATURE: 60 am 70 noon 60 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☐ Concrete Stops
- ☐ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

USEPA Region 4

Ted Wells and John Bozick (ArvinMeritor), Don Williams (Grenada Mfg), Mike Duchene (ETI)

DESCRIPTION OF WORK:

Excavation of section 0+50 to 1+00 was completed. Top of marl was reported at an average depth of 50.33 ft. USEPA and Arvin Meritor representatives were present for site visit. Iron-sand mix for bottom panel (Panel 26) was stockpiled in the pen. No backfill activities occurred on this day.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

Jimmy How **11-15-04**
Signature of Preparer Date

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH, REA, DRS, MJF, JPM

DATE: 11-16-04

DAY Tuesday

WEATHER: partly cloudy

TEMPERATURE: 55 am 75 noon 60 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☐ Concrete Stops
- ☒ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

USEPA Region 4

Ted Wells and John Bozick (ArvinMeritor), Don Williams (Grenada Mfg), Mike Duchene (ETI)

DESCRIPTION OF WORK:

Top and bottom panels of Section 0+50 to 1+00 were backfilled with iron-sand mix. Preliminary estimate shows that the top panel was short on iron. Bottom panel exceeded the field design iron estimate. Envirocon, ETI and BC had a progress meeting in the morning and in late afternoon. Envirocon and ETI proposed widening the top panel width for future panels, cleanout the bottom panel with overnight settled solids, and removal of slurry as possible methods to meet target design on top panels. A bermed retention pond was constructed at 8+00 in the spoils area for slurry waste.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

Jimmy How **11-16-04**
Signature of Preparer Date

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 11-17-04

DAY Wednesday

WEATHER: partly cloudy

TEMPERATURE: 50 am 75 noon 65 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☐ Concrete Stops
- ☒ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Excavation of section 1+00 to 1+50 was resumed. Top panel (Panel 3) width of that section was increased to 54"; bottom panel (Panel 27) width was kept at 3.8 ft. Backfill of the bottom panel was completed in late afternoon. Excavation of section 2+00 to 2+50 was started and the top panel (Panel 5) width was increased to 61".

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jimmy How **11-17-04**
Signature of Preparer Date

J. How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 11-18-04

DAY Thursday

WEATHER: light rain

TEMPERATURE: 50 am 60 noon 55 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☐ Concrete Stops
- ☒ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Top panel (Panel 3) of section 1+00 to 1+50 was backfilled with 100% iron after the settled solids on the bottom panel (Panel 27) were cleaned out with the clam bucket. Panel 27 was covered with approximately 6 to 7 feet of settled solids. Panel 27 was filled with 164 bags of iron. Target number was 190. Slurry removal using the pump was attempted several times as backfill was started. However, it appeared that the pipe and flexible hose kept on clogging. Slurry removal using the air-lift was also tried for a brief period of time before it was also stopped. Excavation of section 2+00 to 2+50 was resumed with the 61" bucket. The bucket was then changed to 28" for excavation of the bottom panel of that section (2+00 to 2+50).

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jimmy How **11-18-04**
Signature of Preparer Date

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Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH, WJR

DATE: 11-19-04

DAY Friday

WEATHER: Overcast

TEMPERATURE: 55 am 65 noon 65 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☐ Concrete Stops
- ☐ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Top panel of section 2+00 to 2+50 was widened to approximately 70". Supermud frac tank was emptied and cleaned out. Supermud was wasted in the bermed pond at station 8+00 and in the spoils area. Ponded water around station 3+00 was pumped into the completed PRB trench at section 5+50 to 6+00. Envirocon indicated the bottom panel of section 2+50 to 3+00 would be excavated at a width of 3.2' and backfilled with 100% iron. It was observed that sections 9+00 to 10+00 were already backfilled to existing grade with clay gravel. It was reported that the backfill occurred several days ago.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jimmy How **11-19-04**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH, WJR

DATE: 11-20-04

DAY Saturday

WEATHER: Overcast and light rain

TEMPERATURE: 55 am 60 noon 60 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☐ Concrete Stops
- ☒ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Top and bottom panel of section 2+00 to 2+50 were backfilled. Bottom panel width was reduced to an estimated width of 2.5 ft (iron width: 2.1 ft) while top panel was widened to an estimated width of 5.75 ft (100% iron). The air lift was used periodically while backfilling the top panel with to remove suspended solids. Sample collected from the slurry discharge from the air lift at a depth of 10 ft shows % iron to be 23%. The slurry discharge from the air lift does not appear to consist of a lot of coarse solids. The dried sample consisted of fines (possibly formation and iron fines). Target number for backfilling top panel was 230 bags or iron. Actual number of bags backfilled: 289 bags.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

Jimmy How **11-20-04**
Signature of Preparer Date

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH, WJR

DATE: 11-21-04

DAY Sunday

WEATHER: Overcast

TEMPERATURE: 55 am 65 noon 65 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☐ Concrete Stops
- ☐ Iron/Sand Backfill
- ☐ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Envirocon continued excavating Panel 6 (from stations 2+50 to 3+00) at a trench width of 5.75'. Excavation will be continued on 11/22/04.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

Will Raines **11-21-04**
Signature of Preparer Date

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: WJR

DATE: 11-22-04

DAY Monday

WEATHER: Rain

TEMPERATURE: 55 am 65 noon 65 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☐ Concrete Stops
- ☒ Iron/Sand Backfill
- ☐ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Samples collected from Panel 5 on 11/20/04 were analyzed. The results were 95.3% at station 2+15 and 95.7% at station 2+20. Envirocon continued excavating Panel 6 (station 2+50 to 3+00) at a width of 5.75' to an average depth of 34'. They switched to a 38" bucket and excavated Panel 30. The average depth of the top of marl was 49.5' below the top of platform. Panel 30 was keyed into the marl to a depth of 50.5'. Envirocon began backfilling Panel 30 with 100% iron in concrete trucks (10 bags per truck with approximately 500 gallons of water). 160 bags of iron were used as Panel 30 was backfilled to an average depth of 31.9'. Two samples were collected at a depth of 40' at stations 2+70 and 2+90 for later analysis.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Will Raines **11-22-04**
Signature of Preparer Date

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: WJR

DATE: 11-23-04

DAY Tuesday

WEATHER: Rain

TEMPERATURE: 55 am 65 noon 65 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☐ Concrete Stops
- ☒ Iron/Sand Backfill
- ☐ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Samples collected from Panel 30 (station 2+50 to 3+00) resulted in iron percentages of 93.8% and 98.6% at stations 2+70 and 2+90, respectively. Approximately 1-3' of sediment was gauged in the top of the trench. It was removed using a clam bucket. Final soundings for the top of Panel 30 resulted in an average depth of 32.1' below the top of platform. envirocon began backfilling Panel 6 with 100% iron from concrete trucks. 260 bags of iron were used. Panel 6 was backfilled to an average depth of 9.8'. Earlier in the day, Envirocon also added LEB-H to Panels 5/29, developed Sections 0+50 - 1+00 and 1+00 - 1+50, and began excavating Panel 7 (station 3+00 to 3+50) to a width of 5'.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Will Raines **11-23-04**
Signature of Preparer Date

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: WJR

DATE: 11-24-04

DAY Wednesday

WEATHER: Sunny

TEMPERATURE: 55 am 65 noon 65 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☐ Trench Excavation
- ☐ Work Platform
- ☐ Concrete Stops
- ☐ Iron/Sand Backfill
- ☐ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Samples were collected at a depth of 20' at stations 2+60 and 2+75. The results of the magnetic separation tests were 99.2% and 98.8%, respectively. Envirocon began laying geotextile in the caps of some of the open panels backfilled with iron. They also cleaned and moved the slurry tanks to allow completion of the remaining endstops. A batch of extra strong slurry was mixed to top of the open Panel 7 if necessary over the break. A few Envirocon employees will be visiting the site to stockpile iron and check on the open trench over the break.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Will Raines **11-24-04**
Signature of Preparer Date

Will Raines

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 11-29-04

DAY Monday

WEATHER: Partly cloudy

TEMPERATURE: 40 am 70 noon 70 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☒ Concrete Stops
- ☐ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Envirocon resumed excavating section 3+00 to 3+50. Bucket size for the top panel was increased to approximately 70 in. Depth to the top/bottom panel interface from top of platform was sounded at 33.5 ft (avg.) before the bucket size was reduced to 3.6 ft for bottom panel excavation. Concrete end stop excavation was started at station 7+00. Gravel on rock filter berm was washed away. Envirocon was informed to repair rock filter. Geotextile that extended on top of platform at section 2+00 to 2+50 was observed inside the trench. Walls of top of platform appeared to have caved in. Envirocon indicated that sand was placed on top of the geotextile prior to work stoppage on 11/24. Additional sand was placed in the trench today and Envirocon said at least a 3-ft clay gravel layer would be backfilled on top of the sand.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jimmy How **11-29-04**
Signature of Preparer Date

Jimmy How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 11-30-04

DAY Tuesday

WEATHER: rain

TEMPERATURE: 55 am 60 noon 55 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☐ Concrete Stops
- ☐ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Trench excavation from 3+00 to 3+50 was resumed. Top of marl was reported at 51 ft. Heavy rain during the day. Rock filter berm was not repaired. Riverdale Creek flooded the outfall ditch. Additional bags were transferred from Grenada Mfg to the site. Busted bags were placed inside the pen and covered prior to work stoppage. Envirocon started backfilling sections 11+00 to 12+10 with clay gravel.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

Jimmy How **11-30-04**
Signature of Preparer Date

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 12-01-04

DAY Wednesday

WEATHER: clear sky

TEMPERATURE: 35 am 60 noon 50 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☒ Concrete Stops
- ☒ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Concrete was poured at end stop 7+00. Envirocon was reminded about repairing the rock filter berm at the outfall ditch. Rick said that he would repair the rock filter once the backhoe will be freed up. Section 3+00 to 3+50 was cleaned out before backfilling the bottom panel with 100% iron. Top of marl was reported at 51 ft. Trench was keyed in at 52.6 ft. Slurry appeared to have broken down in the section 3+00 to 3+50. Marshall Funnel Viscosity (MFS) for the slurry was reported in the 40's seconds in the morning. Recirculation wells were installed prior to backfilling bottom panel in early afternoon. Design amount of iron for bottom panel was estimated at 170 bags. Design depth to top of bottom panel was 32.7 ft. Actual amount of iron placed was 168 bags. Measured depth to top of bottom panel was 30.8 ft. Bottom panel iron backfill was overshot by 1.9 ft. Two samples were collected after bottom panel completion and would be analyzed the next day. MFS for the slurry was reported in the 30's seconds prior to work stopage.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

Jimmy How — Signature of Preparer

12-01-04 — Date

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 12-02-04

DAY Thursday

WEATHER: clear sky

TEMPERATURE: 35 am 65 noon 45 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☒ Concrete Stops
- ☒ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Two samples collected from the bottom panel @ section 3+00 to 3+50 tested 99.3% and 99.8% (31.5 ft @ sta. 3+25 and 32.5 @ sta. 3+35, respectively). Concrete was poured in end stop 7+50. Top of marl at 7+00 and 7+50 was reported @ 47 ft. End stops were reportedly dug @ 50 ft. Rock filter berm at the outfall ditch was not repaired. Trenches from 5+50 to 6+50 were closed and backfilled with clay gravel. Section 3+50 to 4+00 was excavated with 70" bucket for the top panel using fresh guar Average depth was 33.5 ft before bucket switch for the bottom panel excavation. Top of marl @ section 3+50 to 4+00 was 50 ft. Top panel of section 3+00 to 3+50 was backfilled with 100% iron. Design iron for the top panel @ section 3+00 to 3+50: 235 bags (352.5 tons). Actual iron backfilled: 300 bags (450 tons).

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

Jimmy How **12-02-04**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 12-03-04

DAY Friday

WEATHER: Partly cloudy

TEMPERATURE: 30 am 65 noon 40 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☒ Concrete Stops
- ☒ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Two samples collected from the top panel @ section 3+00 to 3+50 tested 99.4% and 99.8% (8 ft @ sta. 3+26 and 10 ft @ sta. 3+37, respectively). Trench for concrete end stop @ 8+00 was excavated. No concrete was poured yet. Additional iron bags were transferred and delivered to the site. The rock filter at the outfall ditch was not repaired. Envirocon was informed about repairing the rock filter. Top of marl for section 3+50 to 4+00 was reported at 50 ft. Trench was reportedly dug 51.3 ft into marl. Bottom panel of section 3+50 to 4+00 was then backfilled with 100% iron. Design amount was 188 bags (~ 281 tons). Actual amount backfilled: 184 bags (~ 276 tons). Bottom panel backfill was overshot by 6.1 ft.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

Jimmy How **12-03-04**
Signature of Preparer Date

J. How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 12-04-04

DAY Saturday

WEATHER: Partly cloudy

TEMPERATURE: 35 am 65 noon 35 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☒ Concrete Stops
- ☒ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Two samples collected from the bottom panel @ section 3+50 to 4+00 tested 97.4% and 98.1% iron by wt. (40 ft @ sta. 3+80 and 40 ft @ sta. 3+90, respectively). Average depth of the top of bottom panel at 6:40 am was 26.8 ft. Average depth recorded the night before at 6:35 pm was 26.4 ft. Envirocon reportedly removed about 9 to 10 ft of slurry from the top panel of the open trench (3+50 to 4+00) and then added water for dilution. The diluted slurry was then pumped with the airlift from each end of the section for about 30 minutes and recycled within the open trench to promote mixing. Sounding depths were then recorded. Average depth of the top of the bottom panel at 3:00 pm dropped to 32.4 ft after slurry dilution and prior to top panel backfill. Marshall funnel viscosity was reported at 42 seconds after the first truck pour for the top panel. A total of 180 bags of iron (270 tons) were backfilled in the top panel of section 3+50 to 4+00 prior to work stoppage. Design amount was 230 bags. Average depth @ 9:15 pm was recorded at 18.9 ft. Envirocon indicated that the remaining bags would be backfilled on Monday. Concrete end stop at 8+00 was also completed.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jimmy How **12-04-04**
Signature of Preparer Date

J. How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH, Ishan Al-Fayyomi

DATE: 12-06-04

DAY Monday

WEATHER: Heavy rain

TEMPERATURE: 70 am 70 noon 70 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☐ Concrete Stops
- ☒ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

John Bozick

DESCRIPTION OF WORK:

Heavy rain occurred throughout the day. Average sounding depth for the top panel of section 3+50 to 4+00 was reported at 17.6 ft (~ 1.3 ft of settled solids) prior to resume 100% iron backfill. Average depth was 18.9 ft on Saturday night after work stopped. About 57 additional bags of iron and 3.05 tons of sand were then backfilled in the top panel. Average depth was recorded at 8.5 ft after backfill stopped. A total of 237 bags (355.5 tons) were backfilled in the top panel. Design amount of iron: 344.14 tons. Two samples collected from the top panel tested 94.5% and 88.5% (20 ft @ sta. 3+80 and 15 ft @ sta. 3+70, respectively). Trench excavation for section 4+00 to 4+50 was resumed. Average depth was reported at 33.8 ft before bucket switch (66" bucket for top panel; 55" bucket for bottom panel). Top of marl for section 4+00 to 4+50 was reported at 50 ft.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

Jimmy How **12-06-04**
Signature of Preparer Date

Jimmy How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH, Ishan Al-Fayyomi

DATE: 12-07-04

DAY Tuesday

WEATHER: Clear sky

TEMPERATURE: 70 am 75 noon 70 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☒ Concrete Stops
- ☒ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

John Bozick

DESCRIPTION OF WORK:

Concrete end stop @ sta. 8+50 was completed. Top of marl at the end stop was reported at 49 ft. End stop was dug at 52 ft from top of platform prior to concrete pour. Top of marl for section 4+00 to 4+50 was reported at 50 ft and was keyed-in the marl at an average depth of 51.3 ft. Bottom panel of section 4+00 to 4+50 was backfilled with 100% iron. Approximately 182 bags or 273 tons of iron (one truck broke down about half-way through the backfill and unloaded the rest of the iron in the pen) were backfilled in the bottom panel. Design amount of iron: approx. 206 bags or 309 tons. Average depth of top of bottom panel was reported at 31.5 ft before backfill stopped. Design depth was 32.4 ft.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

Jimmy How **12-07-04**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 12-08-04

DAY Wednesday

WEATHER: Foggy (am), partly cloudy (pm)

TEMPERATURE: 50 am 70 noon 65 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☐ Concrete Stops
- ☒ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Two samples collected from the bottom panel of section 4+00 to 4+50 tested 99.4% and 99.6% iron (@ 40 ft sta. 4+40 and @ 40 ft sta. 4+25, respectively). Sounding depths were recorded in early morning and showed 0.4 ft of settled solids overnight on top of the bottom panel for section 4+00 to 4+50. Trench excavation from 1+50 to 2+00 was resumed in the morning. Top panel of 1+50 to 2+00 was reportedly dug with a bucket width of 66". Bucket size was reportedly switched to 30" for the bottom panel excavation after digging the top panel to an average depth of 33.7 ft. Top of marl at section 1+50 to 2+00 was reported at 50.2 ft. Top panel of section 4+00 to 4+50 was also backfilled with 100% iron. Approximately 281.6 bags or 422.4 tons of iron were backfilled in the top panel. Design amount of iron: approx. 234 bags or 351 tons. Average depth was reported at 9.4 ft before backfill stopped.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jimmy How **12-08-04**
Signature of Preparer Date

J. How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH, MJF

DATE: 12-09-04

DAY Thursday

WEATHER: clear sky

TEMPERATURE: 60 am 75 noon 70 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☐ Concrete Stops
- ☒ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Two samples collected from the top panel of section 4+00 to 4+50 tested 99.7% and 99.9% iron (@ 20 ft sta. 4+10 and 20 ft sta. 4+30, respectively). Section 1+50 to 2+00 was excavated and cleaned out prior to iron-sand backfill. Top of marl was reported at an average depth of 50.25 ft. Trench was dug to an average depth of 51.75 ft prior to bottom panel backfill. Actual amount of iron backfilled: 72 tons. Design amount of iron: 60.1 tons. Bottom panel was backfilled to an average depth of 32.1 ft prior to top panel pour with 100% iron. Top panel was backfilled with 98 bags (147 tons) to an average depth of 21.6 ft prior to work stoppage. Two samples from the bottom panel were then collected.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jimmy How **12-09-04**
Signature of Preparer Date

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 12-10-04

DAY Friday

WEATHER: Clear sky (am), cloudy (pm)

TEMPERATURE: 50 am 70 noon 55 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☐ Concrete Stops
- ☒ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Two samples collected from the bottom panel of section 1+50 to 2+00 tested 69.7% and 68.7% iron (@ 40 ft sta. 1+85 and @ 40 ft sta. 1+90, respectively). Sounding depths were recorded in early morning and showed 0.7 ft of settled solids overnight on top of the unfinished top panel for section 1+50 to 2+00. Backfill for the top panel was resumed in the morning. A total of 208 bags or 312 tons of iron (incl. the count from the day before) were backfilled on the top panel to an average depth of 9.9 ft. Design amount was 229.4 bags or 344.1 tons. One sample collected from the top panel tested 97.2% iron (@ 20 ft sta. 1+90). Excavation of section 8+50 to 9+00 was also resumed and top of marl was reported at an average depth of 50.5 ft. A trench was dug from the supermud frac tank (sta. 9+20) to the spoils area and was used to discharge the spent supermud slurry.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jimmy How **12-10-04**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 12-11-04

DAY Saturday

WEATHER: Overcast and light wind

TEMPERATURE: 40 am 45 noon 50 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☐ Concrete Stops
- ☒ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

The rock filter berm at the effluent of the outfall ditch was repaired. Bottom panel of section 8+50 to 9+00 was backfilled with the design iron/sand mix (i.e., 1.9 ft iron in 2.5 ft trench) to an average depth of 31 ft. The actual amount of iron backfilled in the bottom panel was 150 tons (design amount of iron: 141.6 tons). The top panel iron width of section 8+50 to 9+00 was modified from 1.6 ft to 2.16 ft. Envirocon indicated that the width increase was estimated on data obtained from the top panel of section 9+00 to 9+50. The top panel of section 8+50 to 9+00 was then backfilled to an average depth of 8.7 ft. The actual amount of iron backfilled was 135 tons (design amount of iron: 119.7 tons). Average depth to top of marl for section 8+00 to 8+50 was reported at 50 ft.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jimmy How **12-11-04**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 12-13-04

DAY Monday

WEATHER: Clear sky

TEMPERATURE: 45 am 60 noon 35 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☐ Concrete Stops
- ☒ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

A check dam was built at station 4+00 at the outfall ditch to reroute surface water upstream of 4+00. Iron/sand was backfilled in bottom and top panels of section 8+00 to 8+50. Top of marl was reported at an average depth of 50 ft. Trench was dug at an average depth of 52.3 ft. Top panel iron width was increased to 1.95 ft (from 1.6 ft). Envirocon said the width increase estimate was based on data obtained from top panel at section 8+50 to 9+00. Samples collected at the bottom panel of section 8+00 to 8+50 tested 86.4% and 81.5% (@ a depth of 40 ft @ sta. 8+25, and @ a depth of 35 ft @ sta. 8+35, respectively). Design % iron for bottom panel was 88.4%. Actual amount of iron backfilled in bottom panel was 135 tons. Design amount of iron for the bottom panel was ~150 tons. Actual amount of iron backfilled in top panel was 142.5 tons. Design amount of iron for the top panel was ~120 tons.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jimmy How **12-13-04**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 12-14-04

DAY Tuesday

WEATHER: Clear sky

TEMPERATURE: 20 am 40 noon 30 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☐ Concrete Stops
- ☐ Iron/Sand Backfill
- ☐ Spoils Area
- ☒ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

One sample collected in the top panel of section 8+00 to 8+00 tested 85.5% iron content (@ 18 ft and sta. 8+25). Section 4+50 to 5+00 was excavated and the bucket width used to dig the top panel was reported at 66 inches or 5.5 ft. The bucket width was changed to 4.7 ft for the bottom panel excavation when the trench depth reached approximately 32.9 ft. The invert at the outfall ditch was backfilled with a mixture of lime and Stewart pit fill from station 4+00 to 5+00. A check dam or dirt berm (with Stewart pit fill) was built at sta. 4+00, and surface water upstream of the check dam was rerouted downstream at station 6+50. Groundwater was observed to seep into invert downstream of the check dam. Additional bags were moved from Grenada Mfg. warehouse to the iron/sand mix staging area.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jimmy How **12-14-04**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH, WJR, RWM

DATE: 12-15-04

DAY Wednesday

WEATHER: Partly cloudy

TEMPERATURE: 15 am 50 noon 30 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☐ Concrete Stops
- ☒ Iron/Sand Backfill
- ☒ Spoils Area
- ☒ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Envirocon resumed backfilling the outfall ditch invert with lime and general fill. Groundwater was observed to seep into the ditch at several spots (between 4+00 to 5+00) from the northern bank at elevations close to the proposed grade. Top of marl for section 4+50 to 5+00 was reported at 49.5 ft. Trench was dug to an average depth of 51.1 ft. The bottom panel was backfilled with 100% iron to an average depth of 29.9 ft (from top of mat elevation of 178.48). Actual amount of iron backfilled: 212 bags (or 318 tons). Design amount of iron: 210.4 bags (or 315.6 tons).

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jimmy How **12-15-04**
Signature of Preparer Date

Jimmy How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: WJR

DATE: 12-16-04

DAY Thursday

WEATHER: Clear sky/light rain

TEMPERATURE: 20 am 40 noon 30 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☐ Concrete Stops
- ☒ Iron/Sand Backfill
- ☐ Spoils Area
- ☒ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Final soundings of the top of Panel 34 (stations 4+50 to 5+00) were taken. The average depth was 29.8' from the top of the mats, indicating that 0.1 foot of sediment had settled. Envirocon began filling from stations 4+50 to 5+00 (Panel 10) with 100% iron. Panel 10 was backfilled to an average depth of 8.25' below the top of the mats. A sample of the backfill was taken at a depth of 20' at station 4+60; another was taken at 18' at station 4+75. Two samples collected the previous night in the bottom panel of section 4+50 to 5+00 (Panel 34) tested 94.5% (@ 35 ft depth and sta. 4+75) and 99.3% iron content (@ 39 ft and sta. 4+85). Section 5+00 to 5+50 was excavated and the bucket width used to dig the top panel was reported at 64 inches or 5.33 ft. The bucket width was changed to 4.0 ft for the bottom panel excavation when the trench depth reached approximately 33.6 ft. Top of marl was encountered at an average elevation of 48.3 feet. The panel was keyed-in and final depths will be collected tomorrow morning after cleaning out the bottom of the section. Groundwater was observed to seep into the invert of the outfall ditch around station 4+50.

Additional bags were moved from Grenada Mfg. warehouse to the iron/sand mix staging area. The development of the PRB from stations 1+50 to 2+00 was completed.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Will Raines **12-16-04**
Signature of Preparer Date

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: WJR

DATE: 12-17-04

DAY Friday

WEATHER: Clear sky

TEMPERATURE: 30 am 50 noon 35 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☐ Concrete Stops
- ☒ Iron/Sand Backfill
- ☐ Spoils Area
- ☒ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

The bottom of Panel 35 (stations 5+00 to 5+50) was keyed into the marl to an average depth of 51.1 feet below the top of the platform. Mats were placed on top of the PRB section between stations 5+00 to 5+50 and the elevation of the mats was shot at 179.28. Measurements for this portion of the trench reference the mat elevation. Envirocon began backfill of Panel 35. After 168 bags of iron, the average top of the panel was shot at 30' below the top of mats. Actual iron weight for Panel 35 was 252 tons; design weight, 259.7 tons. Backfill then began for Panel 11 with 60 bags of iron. At that point the average backfill depth was 24.0' below the top of mats. Results of samples taken of the PRB from Panel 10 showed 99.5% iron (station 4+60, 20' depth) and 99.0% iron (station 4+75, 18' depth). Envirocon began excavating Section 14/38 from stations 6+50 to 7+00 using a bucket width of 43" throughout. Sand was placed above the geotextile and iron backfill in the top of the section between stations 3+50 to 4+00.

A test area was prepared in the outfall ditch from stations 4+00 to 5+00. The fill previously placed in the ditch was removed, mixed with approximately 6% of cement, and replaced in the bottom of the ditch. Additional bags were moved from Grenada Mfg. warehouse to the iron/sand mix staging area.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Will Raines **12-17-04**
Signature of Preparer Date

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: WJR

DATE: 12-18-04

DAY Saturday

WEATHER: Clear sky

TEMPERATURE: 30 am 55 noon 40 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☐ Concrete Stops
- ☒ Iron/Sand Backfill
- ☐ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

According to soundings taken in the morning, approximately 0.6' of sediment settled in the trench overnight. Envirocon continued backfill of Panel 11. After an additional 151 bags of iron (211 total bags for the panel), the average top of the panel was shot at 9.1' below the top of mats. Actual iron weight for Panel 11 was 316.5 tons; design weight, 322.46 tons. Samples of the PRB were taken at station 5+15 and 5+25, each at 20' depth. Results of samples taken of the PRB from Panel 35 showed 92.0% iron (station 5+15, 40' depth) and 95.6% iron (station 5+25, 40' depth). Envirocon encountered marl at an average depth of 48.1' within Section 14/38 from stations 6+50 to 7+00. Geotextile was placed above the iron backfill in the top of the section between stations 4+50 and 5+00. Additional bags were moved from Grenada Mfg. warehouse to the iron/sand mix staging area.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Will Raines **12-18-04**
Signature of Preparer Date

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 12-20-04

DAY Monday

WEATHER: Clear sky

TEMPERATURE: 20 am 40 noon 45 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☐ Concrete Stops
- ☒ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

One sample taken at section 5+00 to 5+50 (@ 20 ft and station 5+25) tested 99.4% iron. Top of marl at section 6+50 to 7+00 was reported at an average depth of 49.5 ft. Bottom of that section was cleaned out and dug to an average depth of 50.8 ft. The bottom panel of section 6+50 to 7+00 was then backfilled with 100% iron. A total of 156 bags (234 tons) of iron were backfilled in the bottom panel to an average depth of 29.9 ft. Design amount: 153.8 bags (or 230 tons). Design depth: 32.3 ft. The bottom panel was overfilled by 2.4 ft. Excavation of section 7+00 to 7+50 was also started.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jimmy How **12-20-04**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 12-21-04

DAY Tuesday

WEATHER: Clear sky

TEMPERATURE: 40 am 55 noon 65 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☐ Concrete Stops
- ☒ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

Filo Coates was on site to do land appraisal. He was escorted and took a few pictures with Don Williams permission.

DESCRIPTION OF WORK:

Excavation for section 7+00 to 7+50 was resumed. Top of marl was reported at an average depth of 48 ft. The dirt dam at station 4+00 of the outfall ditch was cut to allow wastewater to flow through after the dirt/cement fill has set up in the invert (fill/cement section is from station 4+00 to approx. 5+00). The pump that diverted the wastewater was also shut off. Two samples collected from the bottom panel of section 6+50 to 7+00 tested 98.5% and 99.3% iron (@ 32 ft sta. 6+60, and @ 32 ft sta. 6+70). The top panel of section 6+50 to 7+00 was backfilled. The iron width of the top panel was increased from 2.3 ft to 2.99 ft (trench width was 3.5 ft). Envirocon indicated that the width increase was based on data obtained from the northern adjacent top panel. Actual amount of iron backfilled: 210.75 tons. Design amount of iron: 172.07 tons. The top panel was backfilled to an average depth of 8.7 ft. One sample collected at a depth of 20 ft @ sta. 6+40 tested 84.4% iron.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

Jimmy How — Signature of Preparer
12-21-04 — Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 12-22-04

DAY Wednesday

WEATHER: Heavy rain

TEMPERATURE: 50 am 40 noon 35 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☐ Concrete Stops
- ☒ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Depth of top of marl for section 7+00 to 7+50 was adjusted to 48.5 ft. The trench was then cleaned out and keyed in the marl at an average depth of 49.9 ft. The bottom panel was backfilled with 100% iron to an average depth of 29.4 ft. Actual amount of iron backfilled in the bottom panel: ~ 210 tons. Design amount of iron in the bottom panel: ~ 194 tons. Design depth for the bottom panel: 32.25 ft. Two samples collected from the bottom panel tested 96.9% and 92.2% (both @ a depth of 40 ft, and sta. 7+20 and 7+40, respectively). The top panel design iron width was increased from 2.1 ft to 3.05 ft (or 88.9% iron by wt) prior to backfill. The top panel was backfilled to an average depth of 8.85 ft. Design depth for the top panel: 11.25 ft. Actual amount of iron placed: 180 tons. Design amount of iron for the top panel: ~ 157 tons.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jimmy How **12-22-04**
Signature of Preparer Date

Jimmy How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 12-27-04

DAY Monday

WEATHER: Clear sky

TEMPERATURE: 35 am 50 noon 45 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☐ Concrete Stops
- ☐ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Two samples collected from the top panel of section 7+00 to 7+50 tested 84.1% and 90.8% iron (@ 20 ft and sta. 7+20; 20 ft and sta. 7+40, respectively). Some tree debris (stumps, root balls etc.) on the northern side of the outfall ditch were burned. Trench excavation for section 7+50 to 8+00 was started. Top of marl was reported at 49 ft from top of platform.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jimmy How **12-27-04**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 12-28-04

DAY Tuesday

WEATHER: Clear sky

TEMPERATURE: 35 am 60 noon 45 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☐ Concrete Stops
- ☐ Iron/Sand Backfill
- ☒ Spoils Area
- ☒ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Excavation for section 7+50 to 8+00 was resumed. No iron pour was scheduled for the day. Additional tree debris were burned on the northern side of the ditch using the forced air method (i.e., compressed air). General fill and cement were backfilled and compacted in the invert of the outfall ditch (approx. from sta. 4+70 to 5+10). Iron filings from spills (mostly from the mat floors around the conveyor belt that were mixed with sand and dirt) were scraped and backfilled on top of the geotextile fabric in completed section 7+00 to 7+50. Envirocon suggested backfilling the iron/sand/dirt mixture onto the geotextile fabric of the completed trench rather than wasting it in the spoils area.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jimmy How **12-28-04**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 12-29-04

DAY Wednesday

WEATHER: Overcast (am), Partly cloudy (pm)

TEMPERATURE: 45 am 65 noon 60 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☐ Concrete Stops
- ☐ Iron/Sand Backfill
- ☒ Spoils Area
- ☒ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Cement and g.fill mixture backfill in the outfall ditch was resumed (mixture was placed approximately from 5+00 to 6+00 along the ditch). Sediment from the outfall ditch invert was excavated and placed in the spoils area of the PRB around sta. 9+00. Spoils on the southern end of the PRB was also graded. Trench at section 7+50 to 8+00 was cleaned out. Top of marl was reported at 49 ft and trench was keyed-in at an average depth of 50.4 ft. Iron (100%) was placed in the bottom panel of the trench and the iron width was modified from 2.8 ft to 3.6 ft. Backfill for the bottom panel was stopped at an average depth of 30.2 ft. Design amount of iron: 199.3 tons. Actual amount of iron backfilled: 234.3 tons. One sample collected at a depth of 37 ft at sta. 7+65 tested 97.9% iron. Top panel of section 7+50 to 8+00 was then backfilled with iron/sand mixture. The iron width was modified from 1.9 ft to 3.04 ft. Backfill for the top panel was stopped at an average depth of 8.5 ft. Design amount of iron for top panel: 142.14 tons. Actual amount of iron: 189 tons. One sample collected at a depth of 18 ft at sta. 7+80 tested 74.6% iron.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jimmy How **12-29-04**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 12-30-04

DAY Thursday

WEATHER: Partly cloudy

TEMPERATURE: 50 am 65 noon 65 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☐ Trench Excavation
- ☐ Work Platform
- ☐ Concrete Stops
- ☐ Iron/Sand Backfill
- ☒ Spoils Area
- ☒ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Additional trees were burned on the northern side of the ditch. Some equipment was decon and cleaned on the staging area on the north side of the site. Proposed grade of the backfill on invert of the outfall ditch were reshot by Envirocon approximately from sta. 4+00 to 8+50. Stakes placed by the surveyor were displaced during sediment removal from the invert.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jimmy How **12-30-04**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 12-31-04

DAY Friday

WEATHER: Overcast (am), partly cloudy (pm)

TEMPERATURE: 60 am 75 noon 80 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☐ Trench Excavation
- ☐ Work Platform
- ☐ Concrete Stops
- ☐ Iron/Sand Backfill
- ☒ Spoils Area
- ☒ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Cement and general fill were backfilled in outfall ditch invert till approximately sta. 7+50. Some low spots upstream of the ditch were also patched. Iron and dirt from spills around the conveyor belt were scraped and backfilled onto geotextile fabric of the finished trenches. Rainwater from the spoils area on the southern end of the PRB was observed to flow through a cut in the berm towards the south. The cut was covered with wet dirt. Additional iron bags from the Grenada Mfg parking lot were moved next to the conveyor belt on the north end of the site.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jimmy How **12-31-04**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 01-01-05

DAY Saturday

WEATHER: Overcast (am)

TEMPERATURE: 55 am 60 noon pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☐ Trench Excavation
- ☐ Work Platform
- ☐ Concrete Stops
- ☐ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Spoils on the southern end of the PRB were graded. Work stopped about mid-day.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

Jimmy How **01-01-05**
Signature of Preparer Date

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 01-03-05

DAY Monday

WEATHER: Overcast (am), partly cloudy (pm)

TEMPERATURE: 65 am 75 noon 75 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☐ Trench Excavation
- ☐ Work Platform
- ☐ Concrete Stops
- ☐ Iron/Sand Backfill
- ☒ Spoils Area
- ☒ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Elevations along the backfilled material in invert of the outfall ditch were reshot. General fill/cement backfill was resumed in invert till approximately sta. 8+50 along the ditch.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jimmy How **01-03-05**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 01-04-05

DAY Tuesday

WEATHER: Overcast (am), partly cloudy (pm)

TEMPERATURE: 65 am 75 noon 80 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☐ Trench Excavation
- ☐ Work Platform
- ☐ Concrete Stops
- ☐ Iron/Sand Backfill
- ☒ Spoils Area
- ☒ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

General fill/cement backfill was resumed in invert till approximately sta. 10+00 along the ditch around the existing wooden stairs. Spoils on the southern end of the PRB were graded.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jimmy How **01-04-05**
Signature of Preparer Date

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 01-05-05

DAY Wednesday

WEATHER: Overcast (am), partly cloudy (pm)

TEMPERATURE: 65 am 75 noon 80 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☐ Trench Excavation
- ☐ Work Platform
- ☐ Concrete Stops
- ☐ Iron/Sand Backfill
- ☒ Spoils Area
- ☒ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Spoils on the southern end of the PRB were graded. General fill/cement backfill was resumed in invert of outfall ditch. Elevations were reshot and some low spots upstream were patched and compacted with fill and cement.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

Jimmy How **01-05-05**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 01-06-05

DAY Thursday

WEATHER: Overcast

TEMPERATURE: 45 am 50 noon 45 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☐ Concrete Stops
- ☐ Iron/Sand Backfill
- ☒ Spoils Area
- ☒ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

General fill/cement backfill was reportedly backfilled to proposed grade from 4+00 to 10+00. Stumps along the slopes of the outfall ditch were trimmed. A trench adjacent and upstream to Panel 1 (0+00 to 0+50) was excavated. The trench was reportedly 7 ft from Panel 1 (center to center). The trench was dug with a 30-in wide bucket. Depth was reported around 20 ft (deepest point) before work stopped.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jimmy How **01-06-05**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 01-07-05

DAY Friday

WEATHER: Rain

TEMPERATURE: 45 am 45 noon 45 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☐ Concrete Stops
- ☐ Iron/Sand Backfill
- ☒ Spoils Area
- ☒ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Rainwater in spoils area was observed to overflow to the east across the berm at station 10+00. Excavation of trench adjacent to Panel 1 (0+00 to 0+50) was resumed. Average depth of trench was reported at 33.1 ft from current platform elevation of 179.28. Design depth is 32.28 ft from current platform elevation. Iron/sand backfill did not occur and work stopped in mid-afternoon due to thunderstorm.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jimmy How **01-07-05**
Signature of Preparer Date

J. How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 01-08-05

DAY Saturday

WEATHER: Overcast

TEMPERATURE: 45 am 45 noon 45 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☐ Concrete Stops
- ☒ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Panel 1B (0+00 to 0+50) was backfilled with 26.6% iron by wt or 20% by vol. Design amount of iron: 38.39 tons. Actual amount of iron backfilled: 67.5 tons. Panel 1B was overfilled by 0.48 ft above the 168' minimum specified elevation. Two samples collected at a depth of 20 ft tested 38.5% and 39.2% iron by wt. at stations 0+20 and 0+10, respectively. Panel 2B was also excavated. Panel 1B and Panel 2B were separated by a 2.5-ft metal culvert.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jimmy How **01-08-05**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 01-10-05

DAY Monday

WEATHER: Overcast

TEMPERATURE: 60 am 70 noon 65 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☐ Concrete Stops
- ☒ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Panel 2 B (station 0+50 to 1+00) was excavated to an average depth of 33.8 ft from a platform elevation of 179.82. Design depth from the platform elevation was 32.8 ft. Trench was backfilled to an average depth of 10.4 ft from the platform elevation. Design depth was 11.8 ft. The design iron width was modified from 0.6 ft to 0.84 ft. The iron width was reduced to 0.66 ft after the 9th truck. The 2.5-ft culvert (used as end stop) that separated Panel 1B (sta. 0+00 to 0+50) and Panel 2B was also removed and the void was filled with iron-sand mix of 0.66 ft iron. The amount of iron backfilled in Panel 2B: 90 tons. Design amount or iron for Panel 2B: 46 tons. Panel 4B (station 1+50 to 2+00) was also excavated.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jimmy How **01-10-05**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 01-11-05

DAY Tuesday

WEATHER: Partly cloudy

TEMPERATURE: 65 am 75 noon 70 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☐ Concrete Stops
- ☒ Iron/Sand Backfill
- ☒ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

One sample collected at 20 ft and at station 0+65 from Panel 2B (top panel of section 0+50 to 1+00) tested 51.7% iron by wt. Design was 31.4% by wt (0.6 ft iron). Panel 4B (top panel of section 1+50 to 2+00) was backfilled with iron-sand mix. The average elevation of the bottom of the trench before backfill was 145.39. Design elevation was 147. The iron width was also modified from 0.5 ft to 0.55 ft. The iron width was reduced to 0.5 ft after the 6th truck. The average elevation of the trench fill was at 166.89 immediately after last truck. The average elevation was 169.29 about 45 minutes after the last truck. Design elevation was 168. Amount of iron backfilled: 51 tons. Design amount of iron: 39.4 tons. Approximately 20 bags of iron remained at the site.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jimmy How **01-11-05**
Signature of Preparer Date

J. How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: WJR, JH

DATE: 1-12-05

DAY Wednesday

WEATHER: Cloudy

TEMPERATURE: 55 am 70 noon 70 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☐ Concrete Stops
- ☐ Iron/Sand Backfill
- ☐ Spoils Area
- ☒ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Envirocon was notified about the gap in the spoils berm around station 10+50. Sediment runoff to the southeast end of the spoils berm was also observed by Envirocon. Water in the spoils area was observed running to the east towards the wetlands from the berm gap. Envirocon continued excavating Panel 41B (stations 8+00 to 8+50). Top of marl was encountered at an average depth of 48' below the top of the platform (el. 178.89'). Envirocon continued placing rip-rap on top of geotextile in the outfall ditch, stockpiling iron, and keying-in Panel 41B. Mats were placed on the work platform for Panel 41B. Average elevation of the top of the mats was shot at 178.97'. Soundings for the bottom of Panel 41B showed an average depth of 49.2' from the top of the mats. An additional cleanout will be performed in the morning. The backfill sample taken from Panel 4B at a depth of 20' at station 1+65 reportedly contained 33.9% iron (from Envirocon).

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

Will Raines **1-12-05**
Signature of Preparer Date

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: WJR

DATE: 1-13-05

DAY Thursday

WEATHER: Rain

TEMPERATURE: 55 am 55 noon 70 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☐ Concrete Stops
- ☒ Iron/Sand Backfill
- ☐ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

After a cleanout and additional key-in of Panel 41B, the average depth to marl was 50.18' below the tops of the mats. Envirocon began backfilling Panel 41B with an iron/sand mix of 20% iron. Samples taken from the first two trucks showed iron percentages of 30.8% and 28.6%, respectively. Envirocon backfilled the panel to an average depth of 31.7' below the tops of the mats. Design amount of iron was 34.68 tons. The actual amount of iron placed was 72 tons. Samples were collected at a depth of 40' at stations 8+10 and 8+25. Envirocon also began excavating Panel 33B with a bucket thickness of 30".

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Will Raines **1-13-05**
Signature of Preparer Date

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 1-14-05

DAY Friday

WEATHER: Partly cloudy

TEMPERATURE: 40 am 55 noon 50 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☒ Concrete Stops
- ☒ Iron/Sand Backfill
- ☒ Spoils Area
- ☒ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

The gap in the spoils berm at 10+50 was observed to be covered with dirt. Trench at station 4+00 to 4+50 (Panel 9B/33B) was excavated. Top of marl was reported at 49 ft from top of mat elevation. Top of mat elevation was reported at 179.01. Additional pallets were hauled from the shed at the Grenada mfg. to the northern side of the site. Pallets were crushed and burned in the spoils area north of the outfall ditch. Envirocon also started backfilling the top of panel of section 8+00 to 8+50 (above panel 41B) with the specified sand (i.e. Sardis sand). Riprap placement was resumed till station 6+50 in the outfall ditch (riprap extends from 4+50 to 6+50). Trench excavation for concrete end stop at station 6+00 was also started.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jim How **1-14-05**
Signature of Preparer Date
Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 1-15-05

DAY Saturday

WEATHER: Partly cloudy

TEMPERATURE: 35 am 50 noon 45 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☒ Concrete Stops
- ☒ Iron/Sand Backfill
- ☒ Spoils Area
- ☒ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Concrete end stop excavation was resumed. Average depth was reported to be approximately 35 ft before excavation stopped. Riprap placement in the outfall ditch was also resumed till approximately sta. 7+00. The average depth into marl for Panel 33B (station 4+00 to 4+50) was reported at 50.75 ft from top of mat elevation (i.e., 179.01). Iron-sand (iron width of 0.5 ft or 26.6% iron by wt.) was backfilled in Panel 33B. The average depth was reported at 31.6 ft from top of mat elevation. Sounding depths were recorded approximately 30 mins after the last truck pour. Design depth was 32 ft from top of mat elevation. Actual amount of iron backfilled: 63 tons. Design amount of iron: 34.27 tons.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

Jim How **1-15-05**
Signature of Preparer Date
Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 1-17-05

DAY Monday

WEATHER: Partly cloudy

TEMPERATURE: 20 am 40 noon 40 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☒ Concrete Stops
- Iron/Sand Backfill
- ☒ Spoils Area
- ☒ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Panel 8 (station 3+50 to 4+00) was excavated. Depth was reported around 25 ft from top of platform el. of 179.01 before excavation stopped. Trench excavation for concrete end stop at 6+00 was resumed. Top of marl was reported at 50 ft from top of platform. Trench was reportedly dug till 53 ft. Frac tanks were moved further south approximately around station 10+50. Additional riprap was placed in outfall ditch.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jim How **1-17-05**
Signature of Preparer Date
Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 1-18-05

DAY Tuesday

WEATHER: Partly cloudy

TEMPERATURE: 15 am 35 noon 35 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- ☒ Concrete Stops
- Iron/Sand Backfill
- ☒ Spoils Area
- ☒ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Concrete was poured (approx. 56 CY) at end stop 6+00. Additional riprap was placed in outfall ditch till station 10+00. Thickness of riprap along the ditch was observed less than required 1 ft at several locations (incl. slopes and top of invert) based on a preliminary recon from 4+50 to 5+50. Other stations were not inspected yet - Envirocon was then notified. Some spoils were observed eroded to the east over the berm at station 6+00.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

Jim How **1-18-05**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 1-19-05

DAY Wednesday

WEATHER: Partly cloudy

TEMPERATURE: 45 am 65 noon 55 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- Concrete Stops
- ☒ Iron/Sand Backfill
- ☒ Spoils Area
- ☒ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Riprap placement was resumed in the outfall ditch. Low spots on the slopes of the ditch were marked. A gap was made in the spoils berm on the southeast end. A rock filter (R-3) was placed immediately downstream of the gap. A silt fence was also placed adjacent downstream of the rock filter. Iron-sand (26.6% by wt. or 20% by vol.) was backfilled into Panel 8B (top panel of 3+50 to 4+00). Trench was excavated to an average depth of 33.8 ft from mat elevation of 179.01 after cleanout. Design excavation depth was 32 ft from mat elevation. Average depth was 9.5 ft from mat el. after iron-sand backfill stopped. Design depth was 11 ft from mat el. One sample collected at 20 ft and at sta. 3+65 tested 29.5% iron by wt. Top panel above Panel 41B (8+00 to 8+50) was backfilled with 100% sand to an average depth of 10.7 ft from mat elevation.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jim How **1-19-05**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 1-20-05

DAY Thursday

WEATHER: Partly cloudy

TEMPERATURE: 45 am 75 noon 65 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- Concrete Stops
- ☒ Iron/Sand Backfill
- ☒ Spoils Area
- ☒ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Low spots on the bottom of the outfall ditch were marked. Thickness of riprap at the bottom of the ditch averaged 8-10 inches. Riprap placement was resumed to patch the low spots in the ditch. Panel 37B (6+00 to 6+50) was excavated and top of marl was reported at a depth of 49 ft from mat elevation of 180.58. Panel 9B (top panel of 4+00 to 4+50) was reportedly backfilled with sand. Depth was reported to range from 9 to 12 ft. Design depth was 11 ft.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jim How **1-20-05**
Signature of Preparer Date
Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 1-21-05

DAY Friday

WEATHER: Foggy (am), clear sky (pm)

TEMPERATURE: 35 am 75 noon 75 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- Concrete Stops
- ☒ Iron/Sand Backfill
- ☒ Spoils Area
- ☒ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Envirocon resumed filling low spots on the outfall ditch from station 4+50 to 10+00. Actual amount of iron backfilled in Panel 8B (3+50 to 4+00) on 1-19-05 was 44.05 tons. Design was 39.38 tons. Bottom panel of section 6+00 to 6+50 (Panel 37B) was cleaned out in the morning before backfill started. Average depth of the trench was reported at 50.2 ft. Trench was backfill with iron-sand mix of 38% by wt. (or iron width of 0.7 ft). Average depth was reported at 31.8 ft 45 minutes after the last truck pour. Design depth was 33.5 ft. Two samples collected at 40 ft, and at station 6+20 and 6+35 tested 49.8% and 46.2% iron by wt., respectively. Actual amount of iron backfilled was 49.65 tons. Design amount of iron was 42.7 tons.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

Jim How **1-21-05**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 1-24-05

DAY Monday

WEATHER: Clear sky

TEMPERATURE: 35 am 55 noon 50 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- Concrete Stops
- Iron/Sand Backfill
- ☒ Spoils Area
- ☒ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Sounding depths taken at Panel 37B (station 6+00 to 6+50) showed that approximately 9.4 ft of solids had settled over three days. Trench excavation from station 5+50 to 6+00 was resumed. The dirt bridge across the outfall ditch (station 1+50 to 2+00 along the PRB line) was also excavated (about half of the material was removed). The excavated material was stockpiled to the west of the PRB. Some trees on the bank of the outfall ditch upstream of station 4+50 were cut and moved to the spoils area to be burned.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jim How **1-24-05**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 1-25-05

DAY Tuesday

WEATHER: Clear sky

TEMPERATURE: 55 am 70 noon 65 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- Trench Excavation
- ☐ Work Platform
- Concrete Stops
- Iron/Sand Backfill
- ☒ Spoils Area
- ☒ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Additional trees were cleared from the outfall ditch banks (WW discharge to 4+50) and burned in spoils area of PRB at sta. 2+50. Don Williams was informed about filling riprap in front of the concrete foam trap (downgradient of the WW discharge) and the damaged metal supports for the walkway. The 3' dia culvert in the outfall ditch was removed and placed on the western limits of work. The rock filter was temporarily removed for about an hour before replacement. Most material from the dirt bridge from station 1+50 to 2+00 was also removed prior to the outfall invert cleaning. Sediment from the invert was then hauled to the spoils area around 10+00. Demolition of the concrete end stop started in late afternoon. General fill was backfilled into the cleaned invert from about 10+35 to 11+65 prior to work stoppage.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jim How **1-25-05**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 1-26-05

DAY Wednesday

WEATHER: Clear sky

TEMPERATURE: 60 am 75 noon 55 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- Concrete Stops
- Iron/Sand Backfill
- ☒ Spoils Area
- ☒ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

The two dirt dams (@ station 10+00 and @ station 11+50) in the outfall ditch were eroded overnight by a surge in wastewater discharge (wastewater is diverted by a pump from station 10+00 to 12+00). The compacted dirt (completed the day before) in the invert of the ditch from 10+00 to 11+50 were observed wet and were subsequently excavated. Dry general fill was then mixed with cement prior to backfill. The end stop in the ditch (station 11+00) was demolished till proposed grade. Lime was also added to some spots in the outfall ditch downstream of the PRB wall prior to fill/cement backfill. One truck load of iron (15 bags) were unloaded at the staging area. Envirocon resumed excavation of trench from 5+50 to 6+00 (Panels 12 and 36). Average depth of the trench was reported to range between 35 to 40 ft prior to work stoppage.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jim How **1-26-05**
Signature of Preparer Date
Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 1-27-05

DAY Thursday

WEATHER: Clear sky (am), overcast (pm)

TEMPERATURE: 35 am 50 noon 45 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- Concrete Stops
- Iron/Sand Backfill
- ☒ Spoils Area
- ☒ Outfall Ditch Modification and Geosynthetics
- ☒ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Envirocon resumed backfill of the outfall ditch invert and banks with general fill-cement mixture from 10+00 to 12+00. Some spots were also spread with lime to improve workability. Two stumps on the north bank of the ditch at 10+30 were removed and placed in the spoils area on the northern side of the ditch. Four truck loads of iron (60 bags total) were delivered to the Site. A total of 92 bags remained at the staging area. Trench excavation (Panel 12B and 36B) from 5+50 to 6+00 was resumed and top of marl was reported at 50 ft from top of platform elevation of 180.58. Mold growth was observed on one GCL roll that was partially unwrapped. The other rolls were still wrapped and were not inspected yet. Rain was expected that evening and GCL placement was postponed.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jim How **1-27-05**
Signature of Preparer Date

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 1-28-05

DAY Friday

WEATHER: Overcast (am), rain (pm)

TEMPERATURE: 35 am 45 noon 40 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- Concrete Stops
- ☒ Iron/Sand Backfill
- ☒ Spoils Area
- Outfall Ditch Modification and Geosynthetics
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Panel 36B (bottom panel of station 5+50 to 6+00) was backfilled with iron-sand mix (iron width of 0.8 ft). Trench was cleaned out prior to backfill and the average depth into marl was reported 51.2 ft from top of platform elevation of 180.58. Panel 36B was backfilled to an average depth of 32.2 ft 45 minutes after last truck pour. Design depth was 33.5 ft. Actual amount of iron backfilled: 87 tons (58 bags). Design amount of iron: 51.8 tons. Two samples collected at a depth of 40 ft, and station 5+75 and 5+60 tested 52.4% and 58.3% iron by wt, respectively. Design % iron by wt.: 40.5%. Stockpiles of excavated material from the dirt bridge on the northwest end of the Site was covered with plastic to minimize erosion into the outfall ditch. Concrete debris from end stop demolition at station 1+50 was placed in spoils area at station 2+50. Two truck loads of iron (30 bags) were delivered to the Site. Trench excavation for Panel 45 (station 10+00 to 10+50) was started in the afternoon.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jim How **1-28-05**
Signature of Preparer Date
Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 1-29-05

DAY Saturday

WEATHER: Light rain all day

TEMPERATURE: 40 am 45 noon 45 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- Concrete Stops
- ☒ Iron/Sand Backfill
- ☒ Spoils Area
- Outfall Ditch Modification and Geosynthetics
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Soundings collected at station 5+50 to 6+00 showed that 2.4 ft of settled solids had accumulated on top of Panel 36B overnight (last night average: 32.2 ft; this morning average: 29.8 ft). The settled solids were removed by clam bucket and the final soundings averaged 33.6 ft prior to Panel 12B (top panel of section 5+50 to 6+00) backfill. Top and bottom design line interface was 33.5 ft from top of mat. Panel 12B was backfilled with an iron width of 0.6 ft (or 31.4% iron by wt) to an average depth of 10.6 ft. Design depth was 12.5 ft. Actual amount of iron backfilled: 48 tons (or 32 bags). Design amount of iron: 46 tons. Two samples collected at 20 ft, and at station 5+65 and 5+80, tested 31.2% and 29.7% iron by wt. Excavation of Panel 45B (station 10+00 to 10+50) was resumed and top of marl was reported at 53 ft from top of platform elevation. Forty-two bags of iron are left at the staging area.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jim How **1-29-05**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 1-31-05

DAY Monday

WEATHER: Overcast

TEMPERATURE: 40 am 45 noon 45 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- Concrete Stops
- Iron/Sand Backfill
- ☒ Spoils Area
- ☒ Outfall Ditch Modification and Geosynthetics
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Envirocon resumed excavation of Panel 45B (station 10+00 to 10+50). Top of marl was reported at 53 ft from top of mal the day before and the trench was dug to a depth of at least 54 ft into marl. The PC-750 trackhoe was subsequently disassembled and moved to the staging area for cleaning. Silt fence was installed from 4+00 to 1+75 on the outfall ditch southern edge and a dirt dam was placed upstream of station 4+00. A pump was placed immediately downstream of the concrete foam trap (station 1+50). Water from the foam trap was diverted upstream of the rock filter berm at the outfall ditch effluent.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jim How **1-31-05**
Signature of Preparer Date

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 02-02-05

DAY Wednesday

WEATHER: Overcast (am), light rain (pm)

TEMPERATURE: 45 am 50 noon 50 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- Concrete Stops
- Iron/Sand Backfill
- ☒ Spoils Area
- Outfall Ditch Modification and Geosynthetics
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Trench excavation for Panel 20B (station 9+50 to 10+00) was resumed. Some sand was backfilled on top of completed Panel 45B (station 10+00 to 10+50). The dirt dam at station 10+00 in the outfall ditch eroded overnight. Sediment (approx. 4" thick) was observed at several spots on the backfilled invert downstream of the dirt dam. Sand bags were then placed to plug a gap in the dirt dam. Disassembly of the PC-750 trackhoe was continued around the staging area. One of the Envirocon labor crew members (Jim Grabwell) was injured while pressure washing equipment near the pig pen at the staging area. He indicated that the water jet tore through his left glove and made a cut on his palm below his middle finger. He was taken to the hospital for treatment and a had a few stitches before returning to the Site.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jim How **02-02-05**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 02-02-05

DAY Wednesday

WEATHER: Overcast (am), light rain (pm)

TEMPERATURE: 45 am 50 noon 50 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- Concrete Stops
- Iron/Sand Backfill
- ☒ Spoils Area
- Outfall Ditch Modification and Geosynthetics
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Trench excavation for Panel 20B (station 9+50 to 10+00) was resumed. Some sand was backfilled on top of completed Panel 45B (station 10+00 to 10+50). The dirt dam at station 10+00 in the outfall ditch eroded overnight. Sediment (approx. 4" thick) was observed at several spots on the backfilled invert downstream of the dirt dam. Sand bags were then placed to plug a gap in the dirt dam. Disassembly of the PC-750 trackhoe was continued around the staging area. One of the Envirocon labor crew members (Jim Grabwell) was injured while pressure washing equipment near the pig pen at the staging area. He indicated that the water jet tore through his left glove and made a cut on his palm below his middle finger. He was taken to the hospital for treatment and a had a few stitches before returning to the Site.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jim How **02-02-05**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 02-03-05

DAY Thursday

WEATHER: Overcast

TEMPERATURE: 40 am 50 noon 50 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- Trench Excavation
- ☐ Work Platform
- Concrete Stops
- Iron/Sand Backfill
- ☒ Spoils Area
- ☒ Outfall Ditch Modification and Geosynthetics
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Damaged concrete pavement was observed at several locations in the general area adjacent east to the Grenada mfg. main building. Some exposed rebars were also observed and the general area encompasses approximately 15,000 sq-ft. The trackhoe PC-750 was pressure-washed and removed from the site. Spoils on the north side of the ditch was graded. The wet soil at the toe of the north slope of the outfall ditch at station 10+30 was excavated and replaced by dry fill and cement. Approximately 6" of sediment was observed at several spots on the invert of the outfall ditch from 10+00 to 11+50. The sediment was scraped prior to sprinkling dry fill and cement on wet surfaces of the ditch (10+00 to 11+50). The concrete pad for monitoring well MW-10 was damaged, and Envirocon was notified.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jim How **02-03-05**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 02-04-05

DAY Friday

WEATHER: Clear sky

TEMPERATURE: 35 am 70 noon 65 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- Trench Excavation
- ☐ Work Platform
- Concrete Stops
- Iron/Sand Backfill
- ☒ Spoils Area
- ☒ Outfall Ditch Modification and Geosynthetics
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

The spoils area on the north end of the outfall ditch was graded. Excess fill-cement that was placed on the invert of the outfall ditch from 10+00 to 11+50 the day before was scraped to proposed elevation. Don Williams said he would slow down the WW discharge from the plant to facilitate GCL placement. Soft spots in the outfall ditch invert were covered with bentonite prior to GCL placement. GCL was placed from approximately 11+50 to 10+80 (~ 70 feet). Approximately 6" of concrete sand was then graded on the GCL prior to geotextile and rip-rap placement. Rip-rap was not placed on the slopes of the ditch before work stopped. Total iron bags on site: 45.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jim How **02-04-05**
Signature of Preparer Date
Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 02-05-05

DAY Saturday

WEATHER: Clear sky

TEMPERATURE: 40 am 65 noon 60 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- Trench Excavation
- ☐ Work Platform
- Concrete Stops
- Iron/Sand Backfill
- ☒ Spoils Area
- ☒ Outfall Ditch Modification and Geosynthetics
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Envirocon resumed grading the spoils area on the north end of the outfall ditch. A berm was built on the northern edge of the outfall ditch to minimize erosion of spoils to the ditch. Spoils area was crowned (i.e. water would flow towards the creek as well as towards the woods). WW discharge from Grenada mfg. was shut down most of the day. Damp areas in the ditch invert was sprinkled with bentonite prior to GCL installation. GCL placement in the outfall ditch was resumed from 10+80 to 10+30 (GCL limits are approx. from 11+50 to 10+30). Sand (6" layer) was subsequently placed followed by geotextile and some rip-rap (rip-rap installation on the slopes of the GCL area was not complete). Some standing water upstream of the dirt dam at 10+00 was pumped to the woods on the north side of the ditch using the submersible pump. Envirocon was notified by BC to stop pumping water to the woods. Water was then diverted to the rip-rap on the GCL area. The dirt dam at 10+00 was removed, and the geotextile and rip-rap were placed from 10+30 to 10+00. Guar in Panel 19B (top panel of sta. 9+50 to 10+00) was replaced prior to work stoppage.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jim How **02-05-05**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 02-07-05

DAY Monday

WEATHER: Rain

TEMPERATURE: 50 am 60 noon 55 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- Concrete Stops
- ☒ Iron/Sand Backfill
- ☒ Spoils Area
- ☒ Outfall Ditch Modification and Geosynthetics
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Plastic sheets were placed on geotextile portions of the slopes of the outfall ditch (10+00 to 11+50) that were not yet covered with riprap. Panel 20B (9+50 to 10+00) was cleaned out in the morning (trench was dug with 2-ft wide bucket). Average depth was reported at 32.2 ft relative to mat elevation of 178.54 prior to pour. Design depth was 31.54 ft from top of mat. Panel 20B was backfilled with 26.6% iron by wt. Envirocon was notified about checking bucket scale calibration after truck#8 showed 10.8% iron by wt. Scale was then reportedly checked and iron from truck #11 tested 28.2% iron by wt. Actual amount of iron backfilled: 28 bags (42 tons) + 1 bag into culvert. Design amount of iron: 20 bags (30 tons). Average depth was reported at 10.2 ft approximately 45 minutes after the last pour. Design depth was 10.5 ft. Two samples collected from Panel 20B tested 41.7% and 45.3% iron by wt. (@ 22 ft and sta. 9+60, and @ 17 ft and sta. 9+70, respectively). Panel 19B (sta. 9+00 to 9+50) was also excavated while iron was poured in Panel 20B.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jim How **02-07-05**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 02-08-05

DAY Tuesday

WEATHER: Overcast

TEMPERATURE: 55 am 65 noon 60 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- ☒ Trench Excavation
- ☐ Work Platform
- Concrete Stops
- ☒ Iron/Sand Backfill
- ☒ Spoils Area
- ☒ Outfall Ditch Modification and Geosynthetics
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Sixteen bags of iron remained on the site. Some sand was backfilled on top of Panel 45B (10+00 to 10+50). The 2.5-ft culvert that separated Panel 45B and 20B was filled with about half a truck load of iron-sand mix (26.6% iron by wt.) containing two bags of iron prior to its removal. The remaining iron was used in Panel 19B. Panel 19B was cleaned out and the average depth was reported at 32.1 ft from mat el. of 178.72. Design depth was 31.72 ft. Panel 19B was then poured with about 7.5 truck loads of iron-sand mix (26.6% iron by wt.) till around 2:30 pm. Soundings were checked around 4:30 pm without significant settled solids (~ 0.5 ft in some spots). Additional riprap were placed from 10+00 to 11+50. One truck load of iron (15 bags) showed up on site around 5:25 pm. Panel 19B backfill was resumed around 6:00 pm. Actual amount of iron placed: 27 bags (40.5 tons) + 1 bag into culvert. Design amount of iron: 20 bags (30 tons). Avg backfill depth: 8.7 ft. Design depth: 10.7 ft. Two bags of iron remained on the site.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jim How **02-08-05**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 02-09-05

DAY Wednesday

WEATHER: Light rain am; Overcast pm

TEMPERATURE: 55 am 50 noon 45 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- Trench Excavation
- ☐ Work Platform
- Concrete Stops
- ☒ Iron/Sand Backfill
- Spoils Area
- ☒ Outfall Ditch Modification and Geosynthetics
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

The two samples collected from Panel 19B tested 24.6% and 29.6% iron by wt. at station 9+20 (@ depth of 20 ft) and 9+35 (@ depth of 18 ft), respectively. Design mix was 26.6% iron by wt. The 2-ft culvert at station 9+50 that separated Panel 19B and 20B was filled with iron-sand mix containing 26.6% iron by wt (mixture contained 1 bag of iron & 8300 lb sand) prior to its removal. Sand was also added to the top panel (21B) above Panel 45B (sta. 10+00 to 10+50). Average depth was 10.96 ft from top of mat before sand backfill stopped. Frac tanks and the Terex crane were cleaned and pressure washed. The elevations of the subgrade in the outfall ditch from 11+50 to the fence (approx. 12+30) were checked by Envirocon. Riprap were placed in some low spots of the GCL area.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jim How **02-09-05**
Signature of Preparer Date
Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH, REA, JPM

DATE: 02-10-05

DAY Thursday

WEATHER: partly cloudy

TEMPERATURE: 35 am 45 noon 40 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- Trench Excavation
- ☐ Work Platform
- Concrete Stops
- Iron/Sand Backfill
- Spoils Area
- ☒ Outfall Ditch Modification and Geosynthetics
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

Ted Wells, John Bozick - Arvin Meritor

Justin, Scott - Feguson Harbor

DESCRIPTION OF WORK:

Envirocon resumed work on outfall ditch past sta. 11+50. The rock filter at the effluent was removed. Wastewater at the concrete foam trap and water at station 11+50 (a dam was built at sta. 11+50) were rerouted to the mouth of the outfall ditch. Soft soil from the banks and invert of the ditch from 11+50 to 12+20 were removed and filled with cement-fill to proposed grade. Rick with Envirocon indicated that geotextile and riprap would be placed downstream of the fence in the outfall ditch. The frac tank containing guar was cleaned out and the guar was reportedly discharged to a temporary pond in the spoils area at station 10+75. Rusted iron filings were observed on the concrete pad of monitoring well MW-2. Ferguson Harbor technicians were on site to verify NAPLs presence from well MW-2. No NAPLs were observed in the bailer.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

Jim How **02-10-05**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 02-11-05

DAY Friday

WEATHER: Clear sky

TEMPERATURE: 35 am 55 noon 55 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- Trench Excavation
- ☐ Work Platform
- Concrete Stops
- Iron/Sand Backfill
- Spoils Area
- ☒ Outfall Ditch Modification and Geosynthetics
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

The frac tanks were cleaned and were reportedly discharged to the temporary pond in the spoils area. Outfall ditch was graded to proposed grade from 11+50 to the fence (approx. 12+20) prior to geoxtextile installation. Riprap were then spread at the bottom of the ditch and about 3 ft past the fence. Riprap was also placed on the slopes from 11+50 to about 12+00 before work stopped.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jim How **02-11-05**
Signature of Preparer Date
Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 02-12-05

DAY Saturday

WEATHER: Overcast

TEMPERATURE: 35 am 60 noon 55 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- Trench Excavation
- ☐ Work Platform
- Concrete Stops
- Iron/Sand Backfill
- ☒ Spoils Area
- ☒ Outfall Ditch Modification and Geosynthetics
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Riprap placement was resumed in the outfall ditch. Several low spots were identified in the riprap placement after the last load. The frac tanks were moved to the parking lot of Grenada Mfg. Iron filings mixed with sand resulting from spills around the conveyor belt were spread on the ground to the south (approx. 20 ft x 60 ft x 4") between the conveyor and the sand piles. A metal frame that was used on one of the frac tanks was observed leaning on well MW-2 cover and ballards. Envirocon was notified to move the frame. The frame was moved and is leaning on the ballards. The spoils area from approx. 4+50 to 6+00 was expanded 30 ft to the east with most of the original spoils berm being salvaged. Geotextile fabric was then placed on existing ground before excess spoils were spread to the east. The expanded area was filled to about 50% of its capacity before work stopped.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jim How **02-12-05**
Signature of Preparer Date
Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 02-14-05

DAY Monday

WEATHER: Clear sky

TEMPERATURE: 55 am 75 noon 70 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- Trench Excavation
- ☐ Work Platform
- Concrete Stops
- Iron/Sand Backfill
- ☒ Spoils Area
- ☒ Outfall Ditch Modification and Geosynthetics
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Riprap placement was resumed in the outfall ditch to cover several low spots (sta. 10+00 to fence). Some low spots were still identified after all the riprap on site were used up. Decontamination of heavy equipment such as the conveyor belt was also resumed at the staging area. Additional spoils around station 5+00 were pushed into the expanded spoils area (sta. 4+50 to 6+00 and 30 ft to the east). Spoils south of sta. 6+00 were scarified. The metal frame used on one of the frac tanks was now observed leaning on the caution tape tied between the two steel stakes around well MW-2. Envirocon was notified to move the frame. Frame was not moved by the end of the day.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jim How **02-14-05**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 02-15-05

DAY Tuesday

WEATHER: Partly cloudy

TEMPERATURE: 60 am 75 noon 70 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- Trench Excavation
- ☐ Work Platform
- Concrete Stops
- Iron/Sand Backfill
- ☒ Spoils Area
- Outfall Ditch Modification and Geosynthetics
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Frame used on the guar frac tank was observed leaning on caution tape tied to two metal stakes around MW-2. Decon heavy equipment was resumed around the staging area. The storage trailer used to perform magnetic separation test was moved to the parking lot at Grenada Mfg. Spoils area was further expanded from 6+00 to 8+00. Excess spoils were then spread to the new expanded area. Excess spoils around station 4+00 were also scraped to proposed elevation (i.e. approx 3 ft above existing ground). A gap was observed in the berm in the expanded area at station 5+00 - Envirocon was notified. The gap was not plugged at the end of the day.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jim How **02-15-05**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 02-16-05

DAY Wednesday

WEATHER: Cloudy

TEMPERATURE: 50 am 65 noon 60 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- Trench Excavation
- ☐ Work Platform
- Concrete Stops
- Iron/Sand Backfill
- ☒ Spoils Area
- Outfall Ditch Modification and Geosynthetics
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

Pee-wee (Marty's brother)

DESCRIPTION OF WORK:

Spoils area (geotextile was placed after berm was installed) was further expanded 30 ft to the east from station 8+00 to 9+00. Envirocon resumed scraping excess spoils in the original spoils area (to approx. a height of 3 ft above existing ground surface) from station 4+00 to 5+00. The excess spoils were moved to expanded area from station 4+50 to 9+00. Conveyor belt was loaded to a truck and was removed from the site. Other equipment such as concrete trucks were decontaminated at the staging area.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

Jim How **02-16-05**
Signature of Preparer Date

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 02-17-05

DAY Thursday

WEATHER: Partly cloudy

TEMPERATURE: 55 am 65 noon 50 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- Trench Excavation
- ☐ Work Platform
- Concrete Stops
- Iron/Sand Backfill
- ☒ Spoils Area
- Outfall Ditch Modification and Geosynthetics
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

The crane was disassembled and decontaminated at the staging area. Spoils were further spread in the expanded area (sta. 8+00 to 9+00). Scraping excess spoils to required elevation was also resumed. The temporary pond in spoils at sta. 10+00 was closed after most of the water was drained out. Trenches from 9+00 to 10+50 were also closed after the recirculation wells were cut and capped.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

Jim How **02-17-05**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH, MJF

DATE: 02-18-05

DAY Friday

WEATHER: Partly cloudy

TEMPERATURE: 30 am 65 noon 60 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- Trench Excavation
- ☐ Work Platform
- Concrete Stops
- Iron/Sand Backfill
- ☒ Spoils Area
- ☒ Outfall Ditch Modification and Geosynthetics
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Envirocon resumed scraping excess spoils to the required elevation. Excess spoils were moved to the expanded spoils area. The gap in the berm at 5+00 in the expanded area was filled. Low spots of riprap along the banks of the outfall ditch from 10+00 to the fence line were filled. Geotextile fabric and riprap were also installed approximately 10 ft past the fence line. MJF on site to discuss punch list items with Envirocon. Decontamination of heavy equipment at the staging area was continued.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jim How **02-18-05**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 02-19-05

DAY Saturday

WEATHER: Overcast

TEMPERATURE: 45 am 55 noon 55 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- Trench Excavation
- ☐ Work Platform
- Concrete Stops
- Iron/Sand Backfill
- ☒ Spoils Area
- Outfall Ditch Modification and Geosynthetics
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Spoils were graded to required elevation from sta. 4+00 to 12+10 including the expanded area (sta. 4+50 to 9+00). The sampling stairs was installed approx. at sta. 9+80 on the south bank of the outfall ditch and upstream of the french drain. Concrete was not yet poured around the stairs foundation. Heavy equipment decon was resumed at the staging area. The frame that was leaning on the caution tape around well MW-2 was removed. Mud was observed filled over the iron/sand spill that was spread south of the staging area.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jim How **02-19-05**
Signature of Preparer Date
Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 02-21-05

DAY Monday

WEATHER: Light rain (am), partly cloudy (pm)

TEMPERATURE: 65 am 75 noon 75 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- Trench Excavation
- ☐ Work Platform
- Concrete Stops
- Iron/Sand Backfill
- Spoils Area
- ☒ Outfall Ditch Modification and Geosynthetics
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

A dirt dam was built downstream of the foam trap and the wastewater was diverted to a spot downstream of sta. 4+50 in the outfall ditch. Water was observed to back up upstream of the WW discharge. Sediment from the invert of the outfall ditch upstream of sta. 4+50 to the WW discharge was removed and placed in the spoils area. Some wastewater was spilled along the access road during the sediment transfer. Sand-cement was then spread and compacted in the cleaned out invert from about sta. 2+00 to 4+00 before work stopped. Orange flags were placed at gaps observed in the spoils berm and the concrete pad of well MW-14 was observed damaged (Envirocon was notified).

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jim How **02-21-05**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 02-22-05

DAY Tuesday

WEATHER: Overcast (am), partly cloudy (pm)

TEMPERATURE: 55 am 60 noon 65 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- Trench Excavation
- ☐ Work Platform
- Concrete Stops
- Iron/Sand Backfill
- ☒ Spoils Area
- ☒ Outfall Ditch Modification and Geosynthetics
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

One of the office trailer was moved to the Grenada Mfg. parking lot in the morning. Sediment downstream of the foam trap was removed and cement-fill was placed after most of the wastewater was rerouted. Cement-fill was also placed from 4+00 to 4+50 after that segment was cleaned out. Sediment from the ditch invert was placed in the spoils area. Some general fill was placed in small piles in the spoils area along the work platform in the afternoon.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jim How **02-22-05**
Signature of Preparer Date
Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 02-23-05

DAY Wednesday

WEATHER: Overcast (am), rain (pm)

TEMPERATURE: 55 am 50 noon 45 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- Trench Excavation
- ☐ Work Platform
- Concrete Stops
- Iron/Sand Backfill
- ☒ Spoils Area
- ☒ Outfall Ditch Modification and Geosynthetics
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Crane components were loaded in trucks for off-site shipment. Sediment was observed in riprap at and downstream of station 4+50 in outfall ditch. Wastewater was partially rerouted (using the pump) around sta. 4+50 to try removing some sediment. Cement-fill was placed and compacted to proposed grade from ww discharge to sta. 4+50. Additional general fill was placed in small piles in the spoils area along work platform. Envirocon was also shown the gaps observed in the spoils berm.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jim How **02-23-05**
Signature of Preparer Date
Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 02-24-05

DAY Thursday

WEATHER: Overcast

TEMPERATURE: 45 am 45 noon 45 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- Trench Excavation
- ☐ Work Platform
- Concrete Stops
- Iron/Sand Backfill
- ☒ Spoils Area
- ☒ Outfall Ditch Modification and Geosynthetics
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Iron spills were scraped off MW-17 concrete pad. Cement was sprinkled on several soft spots of the outfall ditch invert and banks before geotextile was placed from the foam trap to sta. 4+50. Riprap was placed on the fabric at the bottom of the ditch (No riprap was placed on the ditch banks; vendor was reportedly temporarily out of lime rock). Wastewater was rerouted to sta. 4+50 to try removing some of the sediment that had accumulated in the riprap. Soil (consisting of iron spill, sand and other debris) south of the staging area was scraped and stockpiled at the same area. Three rock filters were installed in the spoils berm (at 6+00, 8+00 and 10+00).

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jim How **02-24-05**
Signature of Preparer Date
Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 02-25-05

DAY Friday

WEATHER: Clear sky (am), cloudy (pm)

TEMPERATURE: 40 am 65 noon 60 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- Trench Excavation
- ☐ Work Platform
- Concrete Stops
- Iron/Sand Backfill
- ☒ Spoils Area
- ☒ Outfall Ditch Modification and Geosynthetics
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

Don Williams

DESCRIPTION OF WORK:

Wastewater was observed flowing over the foam trap after pump was shut off and water diversion was discontinued. Riprap in front of the foam trap (downstream) outlet was cleared (approx. 3 ft clearance). Don Williams was on the site to observe wastewater flow at the foam trap. He suggested finishing riprap placement in the outfall ditch from WW discharge to sta. 4+50 before implementing any corrective actions to the foam trap. A few options were suggested: drilling additional holes (approx same size) adjacent to the foam trap (downstream) outlet; bypassing the flow upstream (water coming across the highway) of the foam trap; raising the downstream concrete berm of the foam trap. Don also indicated that the mats on the access road from the pig pen to the french drain could be left in place. Additional mixed dirt and debris were scraped from the staging area and hauled to the spoils area. Additional 4" HDPE pipes were salvaged and culverts were decontaminated.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

Jim How **02-25-05**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 02-26-05

DAY Saturday

WEATHER: Clear sky

TEMPERATURE: 35 am 65 noon 60 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- Trench Excavation
- ☐ Work Platform
- Concrete Stops
- Iron/Sand Backfill
- ☒ Spoils Area
- Outfall Ditch Modification and Geosynthetics
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

The dirt on the access road from the office trailer to the staging area was scraped and hauled to the spoils area. Additional equipment such as culverts were washed and hauled off-site. The work platform from about sta. 2+50 to 4+00 was also scraped to approximately existing ground elevation. Rick with Envirocon suggested mixing cement (3% by vol.) with the clay gravel in the last two lifts (1 ft) for the access road construction from about sta. 2+50 to 3+50 as a test trial.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jim How **02-26-05**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 02-28-05

DAY Monday

WEATHER: Light rain (am), partly cloudy (pm)

TEMPERATURE: 40 am 65 noon 60 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- Trench Excavation
- ☐ Work Platform
- Concrete Stops
- Iron/Sand Backfill
- ☒ Spoils Area
- ☒ Outfall Ditch Modification and Geosynthetics
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Riprap placement was completed from the WW dicharge to approx. sta. 2+25. Dirt was scraped from the access road (from the office trailer to the staging area) and hauled to the spoils area. Some general fill was spread in the spoils area. The spoils area was temporarily graded so that rainwater drained towards the rock filters built in the spoils berm. Don Williams indicated that the concrete surface or pad inside and outside the pig pen at the staging area could be kept in place.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

Jim How **02-28-05**
Signature of Preparer Date

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 03-01-05

DAY Tuesday

WEATHER: Partly cloudy

TEMPERATURE: 30 am 45 noon 50 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- Trench Excavation
- ☐ Work Platform
- Concrete Stops
- Iron/Sand Backfill
- ☒ Spoils Area
- ☒ Outfall Ditch Modification and Geosynthetics
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

Don Williams

DESCRIPTION OF WORK:

Riprap placement was resumed from the ww discharge to sta. 4+50 (about 6 ft downstream from the foam trap was not filled with riprap). Several low spots in the riprap were also identified. The stump on the north side of the outfall ditch was lifted and moved to the spoils area. General fill was spread in the spoils area from approximately 11+00 to 12+10. Don Williams suggested raising the downstream berm of the foam trap and placing two or three 6-in. PVC pipes in raised concrete. The proposed PVC pipes would also have an elbow and a riser that would be submerged and be perpendicular to the foam trap surface.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

Jim How **03-01-05**
Signature of Preparer Date
Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 03-02-05

DAY Wednesday

WEATHER: Partly cloudy

TEMPERATURE: 35 am 65 noon 60 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- Trench Excavation
- ☐ Work Platform
- Concrete Stops
- Iron/Sand Backfill
- ☒ Spoils Area
- Outfall Ditch Modification and Geosynthetics
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

Don Williams

DESCRIPTION OF WORK:

Don Williams was on site after draining the washers at the plant. Water level flowing over the foam trap weir measured about 3". Don suggested raising the downstream berm (between 8 - 10 niches) and installing five 6" PVC horizontal pipes with an elbow and a riser in the foam trap. Remaining debris and wooden mats in the haul road adjacent west of the work platform were removed and placed in the palettes stockpile (to be burned). The silt fence on the western limits of work from 4+50 to 6+00 was removed. Part of the silt fence was replaced. The spoils area from station 9+00 to 12+10 was covered with general fill before work stopped.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

Jim How **03-02-05**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 03-03-05

DAY Thursday

WEATHER: Partly cloudy

TEMPERATURE: 45 am 70 noon 70 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- Trench Excavation
- ☐ Work Platform
- Concrete Stops
- Iron/Sand Backfill
- ☒ Spoils Area
- Outfall Ditch Modification and Geosynthetics
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Cement (reportedly 3% by vol.) was mixed with the last lift of the work platform from sta. 11+50 to 12+10 for the access road construction. Some mats on the work platform were removed and hauled to the wooden debris stockpile in the spoils area at sta. 2+50. The drainage swale at sta. 13+00 and located southwest of the southern end of the PRB was closed and covered with topsoil. General fill placement on spoils area was completed from sta. 7+00 to 12+10.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jim How **03-03-05**
Signature of Preparer Date
Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 03-07-05

DAY Monday

WEATHER: Rain

TEMPERATURE: 50 am 60 noon 65 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- Trench Excavation
- ☐ Work Platform
- Concrete Stops
- Iron/Sand Backfill
- ☒ Spoils Area
- ☒ Outfall Ditch Modification and Geosynthetics
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Additional damaged boards from the mats on the work platform were hauled to the stockpile in the spoils area at sta. 2+50. Imported clay gravel was spread on the work platform from 2+50 to approx. 3+00. Work stopped around mid morning due to rain.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

Jim How **03-07-05**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 03-08-05

DAY Tuesday

WEATHER: Clear sky

TEMPERATURE: 45 am 55 noon 65 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- Trench Excavation
- ☐ Work Platform
- Concrete Stops
- Iron/Sand Backfill
- ☒ Spoils Area
- Outfall Ditch Modification and Geosynthetics
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Wood debris in the spoils area at station 2+50 was burned. Additional damaged mats on the work platform were hauled to the stockpile. Salvaged mats were hauled to the staging area for cleaning. The existing drainage swale at station 2+00 on the edge of the outfall ditch was graded. The drainage swale is located adjacent west to the office trailer. The downstream end of the culvert that tied in to the swale was cut about 1 ft to remove dirt.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jim How **03-08-05**
Signature of Preparer Date
Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 03-09-05

DAY Wednesday

WEATHER: Rain

TEMPERATURE: 45 am 45 noon 45 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- Trench Excavation
- ☐ Work Platform
- Concrete Stops
- Iron/Sand Backfill
- ☒ Spoils Area
- Outfall Ditch Modification and Geosynthetics
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

The drainage swale at approx. sta. 1+75 at the outfall ditch was covered with fabric and riprap (same riprap used in the outfall ditch). The 18" culvert was installed approx. at sta. 4+75. It spans 120 ft (three 40 ft sections) from the wet area east of the spoils berm to the western toe of the work platform. The dirt around the western toe was graded so that drainage would flow to the swale (with R-3 riprap) located approx. 35 ft to the west. The bedding material (clay gravel) was reportedly mixed with 3% cement. The spoils and the work platform were excavated with a 2-ft bucket. Approx. 6 inches of existing ground surface below the spoils and the work platform were scraped before the clay gravel-cement mixture (approx. 6") was added and lightly compacted with the back of the bucket. The culvert was then placed and the sections were tied with a band and O-ring. Approx. 6 inches of clay gravel-cement mixture was also added and lightly compacted on top of the culvert segment in the spoils area. Spoils were then backfilled on top of the clay gravel-cement mixture. The culvert segment in the work platform area was not covered yet when work stopped.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jim How **03-09-05**
Signature of Preparer Date

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 03-10-05

DAY Thursday

WEATHER: Overcast (am), partly cloudy (pm)

TEMPERATURE: 50 am 60 noon 55 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- Trench Excavation
- ☐ Work Platform
- Concrete Stops
- Iron/Sand Backfill
- ☒ Spoils Area
- Outfall Ditch Modification and Geosynthetics
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Clay gravel-cement mixture (approx. 6 in. to 12 in.) was placed and lightly compacted over the culvert segment in the work platform at sta. 4+75. Approx. 6 in to 12 in. of imported clay gravel was then placed over the clay gravel mixture. Imported clay gravel was also spread on the work platform from sta. 2+50 to 5+50 for the access road construction. Slope of the access road south of sta. 5+50 was graded. Additional mats were cleaned at the staging area. Damaged mats were hauled to the debris stockpile for burning.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jim How **03-10-05**
Signature of Preparer Date

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 03-11-05

DAY Friday

WEATHER: Clear sky

TEMPERATURE: 50 am 55 noon 60 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- Trench Excavation
- ☒ Work Platform
- Concrete Stops
- Iron/Sand Backfill
- ☒ Spoils Area
- Outfall Ditch Modification and Geosynthetics
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Cement was spread on the last lift of clay gravel from sta. 2+50 to 5+50. The access road tapered from about sta. 3+00 to 2+50 before it tied to the haul road south of the outfall ditch. Limestone (610s) was spread on the haul road from the entrance gate to the staging area. The limestone haul road is approximately 6 in. thick and 12 ft wide. Additional mats on the west end of the work platform were removed and hauled to the staging area for cleaning. Damaged mats were placed in the burning pile. The spoils area on the north end of the outfall ditch was graded as well as the dirt area west of the work platform. Wood debris from 3+00 to 12+00 was collected and hauled to the burning pile.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

Jim How **03-11-05**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 03-12-05

DAY Saturday

WEATHER: Clear sky

TEMPERATURE: 55 am 70 noon 75 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- Trench Excavation
- Work Platform
- Concrete Stops
- Iron/Sand Backfill
- ☒ Spoils Area
- Outfall Ditch Modification and Geosynthetics
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

The surface of the area north of MW-2 and MW-17 containing iron spills was scraped and hauled to the spoils berm. Additional mats on the haul road along the outfall ditch were removed and cleaned at the staging area. The haul road with 610s gravel from the front gate to the staging area was widened to between 15 ft - 18 ft. The southern section of the spoils area was tilled. Envirocon and BC did a walkthrough of the site to identify areas where the silt fence can be removed or should be installed/repaired.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jim How **03-12-05**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 03-13-05

DAY Sunday

WEATHER: Partly cloudy

TEMPERATURE: 60 am 75 noon 75 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- Trench Excavation
- Work Platform
- Concrete Stops
- Iron/Sand Backfill
- ☒ Spoils Area
- Outfall Ditch Modification and Geosynthetics
- Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Sam's shed and the two remaining iron bags were moved to the concrete pad (former pig pen). Additional mats were removed and cleaned at the staging area. Most silt fence on the west end of the Site were removed except areas around the drainage swale with rock filters. The silt fence on the edge of the outfall ditch was either repaired or replaced. Debris on the access road and west of work platform were removed and hauled to the dumpsters. Envirocon was notified of some remaining debris that were observed on the spoils and access road areas. The ashes from the burn pile at sta. 2+50 in the spoils area were mixed and graded with the existing spoils.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jim How **03-13-05**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 03-14-05

DAY Monday

WEATHER: Sunny; Thunderstorm night before

TEMPERATURE: 60 am 75 noon 70 pm

ITEMS WORKED ON:

- ☐ Clear and Grub
- ☐ Erosion Control
- Trench Excavation
- Work Platform
- Concrete Stops
- Iron/Sand Backfill
- Spoils Area
- Outfall Ditch Modification and Geosynthetics
- ☒ Surveying
- ☒ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

The mats on the haul road along the outfall ditch from the french drain to the former pig pen in the staging area were left in place. Geotextile were placed on the mats prior to limestone fill (approx. 6" of 610s limestone). The limestone road tied to the access road on the work platform. Envirocon was notified of several soft spots on the access road. Most disturbed areas were hydroseeded including the parking lot outside the baseball field. Inaccessible areas that were not hydroseeded included, but were not limited to, areas behind the silt fence, the dirt road on the north side of the outfall ditch, the slope of the spoils berm, the food plot on the south end of the Site, and the staging area. Envirocon indicated that most of those inaccessible areas would be seeded manually.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

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Jim How **03-14-05**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 03-15-05

DAY Tuesday

WEATHER: Sunny (am); light rain (pm)

TEMPERATURE: 50 am 55 noon 55 pm

ITEMS WORKED ON:

- ☑ Clear and Grub
- ☑ Erosion Control
- Trench Excavation
- Work Platform
- Concrete Stops
- Iron/Sand Backfill
- Spoils Area
- Outfall Ditch Modification and Geosynthetics
- Surveying
- Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Additional cleaning of heavy equipment was resumed at the staging area. The access road on the work platform was regraded. Some debris and used fabric still remained around the access road.

ATTACHMENTS:

- ☑ Description of Work (Continued)
- ☑ Equipment/Personnel Checklist
- ☑ Map/Drawing
- ☑ Other _____

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Jim How **03-15-05**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

BROWN AND CALDWELL

DAILY FIELD REPORT

Project : Permeable Reactive Barrier
Location: Grenada, MS

Observers: JH

DATE: 03-16-05

DAY Wednesday

WEATHER: Overcast and light drizzle

TEMPERATURE: 45 am 50 noon 50 pm

ITEMS WORKED ON:

- ☑ Clear and Grub
- ☑ Erosion Control
- ☐ Trench Excavation
- ☐ Work Platform
- ☐ Concrete Stops
- ☐ Iron/Sand Backfill
- ☐ Spoils Area
- ☐ Outfall Ditch Modification and Geosynthetics
- ☐ Surveying
- ☐ Seeding and Site restoration

VISITORS:

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DESCRIPTION OF WORK:

Additional cleaning of heavy equipment was resumed at the staging area. Mats and other equipment such as culverts were loaded on trucks for shipment.

ATTACHMENTS:

- ☐ Description of Work (Continued)
- ☐ Equipment/Personnel Checklist
- ☐ Map/Drawing
- ☐ Other _____

Jim How **03-16-05**
Signature of Preparer Date

Jim How

Form: CF 22684a.xls

APPENDIX D

PHOTOGRAPHIC LOG

1. 9/14/05: Area cleared. PRB centerline staked out Looking south.

2. 9/30/05: Work platform and construction access road (or mat road). Looking south.

3. 9/30/05: Spoils berm construction. Looking south.

4. 10/01/04: Trench excavation for concrete end-stop construction using Supermud-biopolymer slurry. Excavated material is placed over geotextile fabric in spoils area. Looking east.

5. 10/6/05: Pouring concrete for end-stop construction. Looking east.

6. 10/20/05: Trench excavation for PRB construction using biopolymer slurry. Looking south.

7. 10/20/05: Filling iron and sand into concrete truck using conveyor.

8. 10/26/05: Backfill trench with iron-sand. Looking north.

9. 10/29/05: Capping PRB trench with geotextile and sand. Looking north.

10. 02/04/05:Placing GCL and cover soil across PRB in outfall ditch.

11. 02/05/05: Placing geotextile fabric over cover soil. Looking east.

12. 02/05/05: Riprap placed over geotextile in outfall ditch. Looking east.

13. 03/09/05: Installing 18" culvert across PRB. Looking west.

14. 03/16/05: Spoils and restored areas seeded. Access road on PRB centerline. Looking north.

APPENDIX E

LOG OF PROJECT SUBMITTALS

SUBMITTAL LOG
PERMEABLE REACTIVE BARRIER
GROUNDWATER INTERIM MEASURE
GRENADA, MISSISSIPPI
Contractor: ENVIROCON

No.	Submittal Description	Ref. Spec.	Date Received	Action Taken	Action Date	Respons. Vend/Sub	Comments
1A	Requests for acceptance of products and/or equipment other than specified	01340-1.02	8/20/04	AR	8/25/04 (9/15/04)	Envirocon	Does not meet minimum gradation spec. See Subreview No.1A.
2A	Health and Safety Plan	01500-1.04	8/20/04	MC	8/25/04 (9/15/04)	Envirocon	Provide an SOP for working around hunting grounds. Provide map for hospital route, EZ, CRZ, support zone, exit emergency route. Provide safety protocol for operating equipment during storm and lightning.
3A	Name, address, and phone number of surveyor	01050-1.04A	8/20/04	NE	8/25/04 (9/15/04)	Envirocon/ Chad Woods	No Exceptions noted.
4A	Work area security protocol	01540-1.04	8/23/04	NE	8/25/04 (9/15/04)	Envirocon	No Exceptions noted.
5A	Survey Plan	01050-1.04B	8/30/04	NE	8/30/04 (9/15/04)	Envirocon	No Exceptions noted.
6A	Application and Certificate for Payment Form	01027-1.03	8/30/04	NE	8/30/04 (9/15/04)	Envirocon	No Exceptions noted.
7A	Change Order Form	01035-1.03B	8/30/04	NE	8/30/04 (9/15/04)	Envirocon	No Exceptions noted.
8A	Schedule of Values	01370-1.03	9/9/04	NE	9/10/04 (9/14/04)	Envirocon	No Exceptions noted.
9A	Warranties and Bonds	01740-1.05	9/9/04	NE	9/10/04 (9/30/04)	Envirocon	No Exceptions noted. Copies provided 9/18/04.
10A	Written Evidence and Competence in Biopolymer Slurry Trench Construction	02226-1.05A	9/9/04	NE	9/10/04 (9/14/04)	Envirocon	No Exceptions noted.
11A	Qualifications of Geotechnical Engineer and Testing Firm	02200-1.05B	9/9/04	NE	9/10/04 (9/14/04)	Envirocon/ Midsouth	No Exceptions noted.
12.1.A	Test report for work platform stone from Dunham pit	02200-1.05C	9/9/04	MC	9/10/04 (9/16/04)	Envirocon/ Midsouth	Provide certification per spec. 02200-1.05D.
12.2.A	Test report for work platform stone from Towns pit	02200-1.05C	9/9/04	MC	9/10/04 (9/16/04)	Envirocon/ Midsouth	Provide certification per spec. 02200-1.05D.
12.3.A	Test report for trench sand from Memphis Stone and Gravel	02200-1.05C	9/9/04	MC	9/10/04 (9/16/04)	Envirocon/ Midsouth	Provide certification per spec. 02200-1.05D.
12.4.A	Test report for trench sand from JJ Ferguson	02200-1.05C	9/9/04	R	9/10/04 (9/16/04)	Envirocon/ Midsouth	Trench sand does not meet specifications.
12.5.A	Test report for trench sand	02200-1.05C	9/9/04	R	9/10/04	Envirocon/	Trench sand and pea rock do not meet specifications.

LEGEND: NE = No Exceptions
MC = Make Corrections
AR = Amend and Resubmit
R = Rejected – See remarks

SUBMITTAL LOG
PERMEABLE REACTIVE BARRIER
GROUNDWATER INTERIM MEASURE
GRENADA, MISSISSIPPI
Contractor: ENVIROCON

No.	Submittal Description	Ref. Spec.	Date Received	Action Taken	Action Date	Respons. Vend/Sub	Comments
	and pea rock from JJ Ferguson				(9/16/04)	Midsouth	
12.6.A	Test report for trench sand from Greenville Gravel	02200-1.05C	9/9/04	R	9/10/04 (9/16/04)	Envirocon/ Midsouth	Trench sand does not meet specifications.
12.7A	Test reports for General fill – Stewart pit	02200-1.05C	9/22/04	MC	9/23/04 (10/1/04)	Envirocon/ Midsouth	Provide certification per spec. 02200-1.05D. See 24.2A
12.8A	Test reports for General fill – Topsoil	02200-1.05C	9/22/04	MC	9/23/04 (9/30/04)	Envirocon/ Midsouth	Provide certification per spec. 02200-1.05D.
12.9A	Sieve Analysis for Smith Brothers Cement Sand	02200-1.05C	10/14/04	NE	11/18/04 (12/9/04)	Envirocon	Provide certification per spec. 02200-1.05D. See 24.4A
12.10 A	Sieve Analysis for Cover Soil from Memphis Stone & Gravel	02200-1.05C	12/13/04	NE	12/13/04 (12/14/04)	Envirocon	No Exceptions noted.
12.11 A	Gradation data for 3" stone (rip-rap) from Martin Marietta Aggregates	02200-1.05C	12/14/04	R	12/14/04	Envirocon	Does not meet R-3 specs (too small)
12.12 A	Gradation data for 4x8 gabion stone for outfall ditch rip-rap	02200-1.05C	12/14/04	NE	1/3/05 (1/17/05)	Envirocon	No Exceptions noted.
13A	Information on earthwork equipment to be used	02200-1.05E	9/9/04	NE	9/10/04 (9/14/04)	Envirocon	No Exceptions noted.
14A	Environmental Protection Implementation Plan	01110-1.03A- C	9/9/04	MC	9/13/04 (9/30/04)	Envirocon	Provide site plan indicating all proposed locations of Contractor temporary facilities and activities. Displaced slurry during backfilling should be contained in **impervious lined** earthen berms. Add incidental dust control. Protect wetlands. Use biopolymer for PRB trenching. Signature on NPDES.
15.1.A	Contractor request for substitution- silt fence	01600-1.03	9/9/04	MC	9/10/04 (9/15/04)	Envirocon	The proposed silt fence does not meet the current specifications. The proposed silt fence shall be installed at Contractor's risk. If MDEQ and/or the USEPA requests that the silt fence specified in the Section 02931, part 2.01 shall be used, the Contractor shall replace the proposed silt fence and install the specified silt fence at no additional cost to the Owner.
15.2.A	Contractor request for substitution- 610's	01600-1.03	9/10/04	MC	9/13/04	Envirocon	Provide certification per spec. 02200-1.05D.

LEGEND: NE = No Exceptions
MC = Make Corrections
AR = Amend and Resubmit
R = Rejected – See remarks

SUBMITTAL LOG
PERMEABLE REACTIVE BARRIER
GROUNDWATER INTERIM MEASURE
GRENADA, MISSISSIPPI
Contractor: ENVIROCON

No.	Submittal Description	Ref. Spec.	Date Received	Action Taken	Action Date	Respons. Vend/Sub	Comments
15.2.B	Contractor request for substitution- 610's	01600-1.03	9/24/04	MC	10/13/04	Envirocon	Provide certification per spec. 02200-1.05D. See 24.3A
15.3A	Contractor Request for Substitution – Rock Filter Berm	01600-1.03	10/8/04	NE	11/18/04 (12/9/04)	Envirocon	No Exceptions noted.
15.4A	Contractor Request for Substitution – Rip-rap	01600-1.03	12/14/04	NE	1/3/05 (1/17/05)	Envirocon	No Exceptions noted.
15.5A	Contractor Request for substitution – General fill within outfall ditch	01600-1.03	4/18/05	NE	4/18/05 (6/2/05)	Envirocon	No Exceptions noted.
15.6A	Contractor Request for substitution – Gravel access road	01600-1.03	4/18/05	NE	4/18/05 (6/2/05)	Envirocon	No Exceptions noted.
15.7A	Contractor Request for substitution – Cement-stabilized culvert bedding material	01600-1.03	4/21/05	NE	4/21/05 (6/2/05)	Envirocon	No Exceptions noted.
15.8A	Contractor Request for substitution – Cement-stabilized access road	01600-1.03	4/21/05	NE	4/21/05 (6/2/05)	Envirocon	No Exceptions noted.
16.1.A	Shop drawings, test data and product data - Geotextiles	01340-1.04	9/9/04	MC	9/10/04 (9/15/04)	Envirocon	Please provide actual roll specific test values for each roll delivered to the site. Also, provide product data for US 200 geotextile currently installed under the mats.
16.2.A	Shop drawings, test data and product data – slurry polymer	01340-1.04	9/9/04	AR	9/13/04 (9/30/04)	Envirocon	State that it's only to be used for end stops.
16.2B	Shop drawings, test data and product data – Super Mud slurry polymer	01340-1.04	10/15/04	NE	11/18/04 (12/9/04)	Envirocon	No Exceptions noted.
16.3A	Shop drawings, test data and product data – GCL Bentomat DN Certified Properties	01340-1.04	9/16/04	NE	9/20/04	Envirocon	No Exceptions noted.
16.4A	Rantec Guar Gum MSDS	01340-1.04, 02226-1.05C.4	9/30/04	NE	10/14/04	Envirocon	No Exceptions noted.
16.5A	Soda Ash MSDS	01340-1.04,	9/30/04	NE	10/14/04	Envirocon	No Exceptions noted.

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16.6A	Troysan 142 MSDS	02226-1.05C.4 01340-1.04, 02226-1.05C.4	9/30/04	R	10/22/04	Envirocon	Troysan 142 is not approved for use as a slurry preservative in the US.
16.7A	Busan 1059 MSDS	01340-1.04, 02226-1.05C.4	9/30/04	NE	10/14/04	Envirocon	No Exceptions noted.
16.8A	Rantec LEB-H MSDS	01340-1.04, 02226-1.05C.4	9/30/04	NE	10/14/04	Envirocon/ Rantec	No Exceptions noted.
16.9A	Shop Drawings, test data, and product data – 18" culvert	01340-1.04	4/18/05	NE	4/18/05 (6/2/05)	Envirocon/ AK Steel	No Exceptions noted.
17.1.A	Geosynthetic manufacturer/fabricator qualifications	02233-1.06A	9/9/04	NE	9/10/04 (9/15/04)	Envirocon	No Exceptions noted.
17.2A	Geosynthetic manufacturer and/or fabricator qualifications - GCL	02233-1.06A	9/16/04	NE	9/20/04	Envirocon	No Exceptions noted.
18A	Certificate of calibration for field tensiometer	02233-1.06F	9/9/04	NE	9/13/04 (9/16/04)	Envirocon	No Exceptions noted.
19.1.A	Manufacturer's instructions - Geotextile	01600-1.05	9/9/04	NE	9/10/04 (9/15/04)	Envirocon	No Exceptions noted.
19.2A	Manufacturer's instructions - GCL	01600-1.05	9/16/04	NE	9/20/04	Envirocon	No Exceptions noted.
20A	Individuals authorized to accept changes	01035-1.03A	9/9/04	NE	9/13/04 (9/16/04)	Envirocon	No Exceptions noted.
21A	Construction sequencing plan	02931-1.04A	9/9/04	NE	9/13/04 (9/16/04)	Envirocon	No Exceptions noted.
22A	Field staff resumes	02226-1.05B	9/10/04	NE	9/13/04 (9/16/04)	Envirocon	No Exceptions noted.
22B	Field staff resumes	02226-1.05B	9/22/04	NE	9/23/04 (9/30/04)	Envirocon	No Exceptions noted.
23A	Spill Control Plan	01110-1.04F	9/10/04	MC	9/13/04 (9/16/04)	Envirocon	A designated Envirocon personnel should be present at all times during fuel transfer operations. Provide

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							additional spill preventive measures such as installing temporary protective traffic barriers and warning signs around the fuel tanks. Also, fire extinguishers should be present next to the fuel tanks.
23C	Spill Control Plan	01110-1.04F	9/23/04	MC	9/23/04 (9/30/04)	Envirocon	Per Federal regulations 40 CFR 112, a site specific Spill Pollution, Control, and Countermeasure (SPCC) Plan would be required if the total oil/petroleum aggregate capacity exceeds 1320 gallons (for containers > 55 gallons).
24.1A	Certification of Clean material – Clay gravel from Townes pit	02200-1.05D	9/23/04	NE	9/23/04 (9/30/04)	Townes pit	No Exceptions noted. See 12.2A.
24.2A	Certification of Clean Material – Dirt from Townes Pit (Stewart Pit)	02200-1.05D	10/14/04	NE	11/18/04 (12/9/04)	Envirocon	No Exceptions noted.
24.3A	Certification of Clean Material – Material from Martin Marietta Aggregates	02200-1.05D	10/14/04	NE	11/18/04 (12/9/04)	Envirocon	No Exceptions noted.
24.4A	Certification of Clean Material – Material from Smith Brothers Gravel	02200-1.05D	10/24/04	NE	11/18/04 (12/9/04)	Envirocon	No Exceptions noted.
24.5A	Certification of Clean Material – Memphis Stone and Gravel Co. – dated 2/2/05	02200-1.05D	2/7/05	NE	2/9/05 (2/15/05)	Envirocon	Cover soil and PRB cap material
24.6A	Certification of Clean Material – Material from Martin Marietta Aggregates – dated 2/2/05 – 4x8 gabion stone	02200-1.05D	2/16/05	NE	2/16/05 (rev 2/24/05)	Envirocon	No Exceptions noted.
25A	Slurry Wall Operating Plan	02226-1.05C	9/17/04	MC	9/27/04	Envirocon	See Submittal Review Comments
25B	Slurry Wall Operating Plan	02226-1.05C	10/15/04	MC	12/1/04 (12/9/04)	Envirocon	Provide end stop cure time; verify slurry material compatibility with water supplies
26A	Site plan with proposed temporary facilities/activities and locations	01110-1.03D	9/17/04	NE	9/21/04 (9/30/04)	Envirocon	Construction entrance and haul roads in wrong locations.

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27A	Working Drawings	01340-1.05	9/23/04	NE	9/23/04 (9/30/04)	Envirocon	Construction entrance and haul roads in wrong locations. Show end stop embedment length from outside walls of PRB. Use 19071-09 Revision 1 for panel schedule.
28.1A	Sample – "Subgrade Acceptance Certificate"	02233-1.06E	9/24/04	NE	10/14/04	Envirocon	No Exceptions noted.
29.1A	Test reports for Dunham 610s material	02200-1.05F/2.04 B.1	9/28/04	NE	9/28/04	Envirocon/ Midsouth	No Exceptions noted.
29.2A	Test reports for Towns pit material	02200-1.05F/2.04 B.1	9/28/04	NE	9/28/04	Envirocon/ Midsouth	No exceptions noted.
29.3A	Test reports for Dunham pit (610s) material	02200-1.05F/2.04 B.1	2/22/05	NE	2/24/05	Envirocon/ Midsouth	No exceptions noted.
29.4A	Test reports for Towns pit material (gradation)	02200-1.05F/2.04 B.1	2/16/05	NE	2/16/05	Envirocon/ Midsouth	Originally submitted as 29.5A, number later corrected to 29.4A (2/24/05)
30.1A	Construction progress schedule	01310-1.03A	9/28/04	MC	9/28/04	Envirocon	Please include schedule for check dams and outfall ditch modifications. Based on the pre-construction meeting, it was recommended that the outfall ditch modifications be implemented during non-rainy season, preferably
31.1A	Sieve Analysis for Smith Brothers Cement Sand – 1/100CY	02200-1.05C	10/25/04	NE	11/18/04 (12/9/04)	Envirocon	No Exceptions noted.
31.2A	Sieve Analysis for Smith Brothers Cement Sand – 1/100CY	02200-1.05C	10/25/04	NE	11/18/04 (12/9/04)	Envirocon	No Exceptions noted.
31.3A	Sieve Analysis for Smith Brothers Cement Sand – 1/100CY	02200-1.05C	11/30/04	NE	12/1/04 (12/9/04)	Envirocon	No Exceptions noted.
31.4A	Sieve Analysis for Smith Brothers Cement Sand – 1/100CY	02200-1.05C	11/30/04	NE	12/1/04 (12/9/04)	Envirocon	No Exceptions noted.

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31.5A	Sieve Analysis for Smith Brothers Cement Sand – 1/100CY	02200-1.05C	12/16/04	NE	1/3/05 (1/17/05)	Envirocon	1200-1600CY. No Exceptions noted.
31.6A	Sieve Analysis for Smith Brothers Cement Sand – 1/100CY	02200-1.05C	2/7/05	NE	2/9/05 (2/15/05)	Envirocon	1600-2300CY (1800-2400 on report). No Exceptions noted.
31.7A	Sieve Analysis for Smith Brothers Cement Sand – 1/100CY	02200-1.05C	2/16/05	NE	2/16/05	Envirocon	2300-2500CY (2500-2600 on report). No Exceptions noted.
31.8A	Grain size analyses for trench sand – 2500 to 3000 CY delivered	02200-1.05F to 2.03D	3/3/05	NE	3/24/05 (4/1/05)	Envirocon/ Midsouth	No Exceptions noted.
32.1A	Excavated Material Analysis	02226-3.06C	10/25/04	NE	11/18/04 (12/9/04)	Envirocon	No Exceptions noted.
32.1B	Excavated Material Analysis	02226-3.06C	12/14/04	NE	1/3/05 (1/17/05)	Envirocon	Original submittal analyzed for PCE accidentally; this is a correction (TCE analysis)
32.2B	Excavated Material Analysis	02226-3.06C	12/14/04	NE	1/3/05 (1/17/05)	Envirocon	Additional samples per spec frequency (no submittal 32.2A)
32.3A	Excavated Material Analysis	02226-3.06C	1/20/04	NE	1/24/05	Envirocon	Additional samples per spec frequency
33.A	Installer's Letter of Approval and Installation Capabilities	02233-1.06A	12/6/04	NE	12/10/04	Envirocon	No Exceptions noted.
34.1A	Gradation/classification for cover soil from Memphis Stone and Gravel	02200-2.02C	12/16/04	NE	1/3/05 (1/17/05)	Envirocon	No Exceptions noted.
34.2A	Gradation/classification for cover soil	02200-2.02C	12/16/04	NE	1/3/05 (1/17/05)	Envirocon	Per spec frequency
34.3A	Gradation/classification and hydraulic conductivity for cover soil	02200-2.02C	2/16/05	NE	2/16/05	Envirocon/ Midsouth	No Exceptions noted.
34.4A	Hydraulic conductivity for cover soil material from Memphis Stone & Gravel	02200-2.02C	3/3/05	NE	3/24/05 (4/1/05)	Envirocon/ Midsouth	No Exceptions noted.
35A	Stormwater Drainage Swales	NA	2/23/05	NE	2/24/05	Envirocon	No Exceptions noted.
36.1A	Gradation/Classification for general fill material from	02200-2.01B	3/3/05	NE	3/24/05 (4/1/05)	Envirocon/ Midsouth	No Exceptions noted.

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	Stewart Pit						
37.1A	As-built Survey	01050-1.04	8/8/05	NE	8/8/05	Envirocon	
38.1A	Photo Album	01380	9/18/05	NE	(8/18/05) 9/29/05	Envirocon	

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